ZooKeys 1191: 151–213 (2023)
DOI: 10.3897/zookeys.1191.107324

Research Article

The ants of the Galápagos Islands (Hymenoptera, Formicidae): a historical overview, checklist, and identification key

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Abstract

The Galápagos ant fauna has long been understudied, with the last taxonomic summary being published almost a century ago. Here, a comprehensive and updated overview of the known ant species of the Galápagos Islands is provided with updated species distributions. The list is based on an extensive review of literature, the identification of more than 382,000 specimens deposited in different entomological collections, and recent expeditions to the islands. The ant fauna is composed of five subfamilies (Dolichoderinae, Dorylinae, Formicinae, Myrmicinae, and Ponerinae), 22 genera, 50 species, and 25 subspecies, although three species (*Crematogaster crinosa* Mayr, 1862, *Camponotus senex* (Smith, 1858), and *Solenopsis saevissima* (Smith, 1855)) are considered dubious records. Finally, an illustrated identification key of the species found in the archipelago is presented.

Key words: Checklist, distribution, Galápagos ants, taxonomy

OPEN ACCESS

Academic editor: Sebastian Salata
Received: 1 June 2023
Accepted: 20 October 2023
Published: 13 February 2024

ZooBank: https://zoobank.org/7B9C6D11-82D8-4521-BD8E-4D7D3DAB27A4

Citation: Herrera HW, Tocora MC, Fiorentino G, Causton CE, Dekoninck W, Hendrickx F (2023) The ants of the Galápagos Islands (Hymenoptera, Formicidae): a historical overview, checklist, and identification key. ZooKeys 1191: 151–213. https://doi.org/10.3897/zookeys.1191.107324

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Introduction

Until recently, the ant fauna of the Galápagos Islands was poorly studied. Early expeditions to the Galápagos collected only a few specimens at specific sites, primarily in the arid zones, which were more accessible (Smith 1877; Emery 1893; Wheeler 1919, 1924, 1933). This resulted in the first lists of Galápagos ant species published by Wheeler (1919, 1924, 1933) and Stitz (1932). Linsley and Usinger (1966) updated these lists by compiling all known reports of ants in the Galápagos archipelago, reporting 19 species and 34 subspecies. Only after Silberglied (1972) reported *Wasmannia auropunctata* (Roger, 1863), the invasive little fire ant, in the Galápagos, did the interest in ants increase. At that time, studies were mainly focused on understanding the impact of *W. auropunctata* on native species (Clark et al. 1982; Lubin 1984). These studies led to several new records though they were limited to certain localities on a few major islands. Later studies by Pezzatti et al. (1998) and Snelling and Longino (1992) provided some important additions to the Galápagos ant fauna, but a systematic sampling of all islands was still needed (Brandão and Paiva 1994). In 2005, we initiated a project to study material deposited in collections worldwide and sampled all major islands in the archipelago, which resulted in many new ant records (Fig. 1) (among others: Longino 2003; Pacheco et al. 2007; Herrera and Longino 2008; Herrera and Causton 2010; Lattke 2011; Herrera et al. 2013, 2014). Here, we list all known species records (past and present) from the Galápagos Islands and provide an illustrated identification key for the established 47 taxa known to date, we do not include dubious records in the key. Also, this checklist does not include species intercepted in quarantine inspection activities in the Galápagos as these have not been confirmed as established in the islands. These intercepted species include: *Acromyrmex octospinosus* (Reich, 1793), *Brachymyrmex patagonicus* Mayr, 1868, *Camponotus brettesi* Forel, 1899, *Crematogaster curvispinosa* Mayr, 1862, *Eciton vagans angustatum* Roger, 1863, *Ectatomma ruidum* (Roger, 1860), *Linepithema humile* (Mayr, 1868), and *Notoncus ectatommoides* (Forel, 1892).

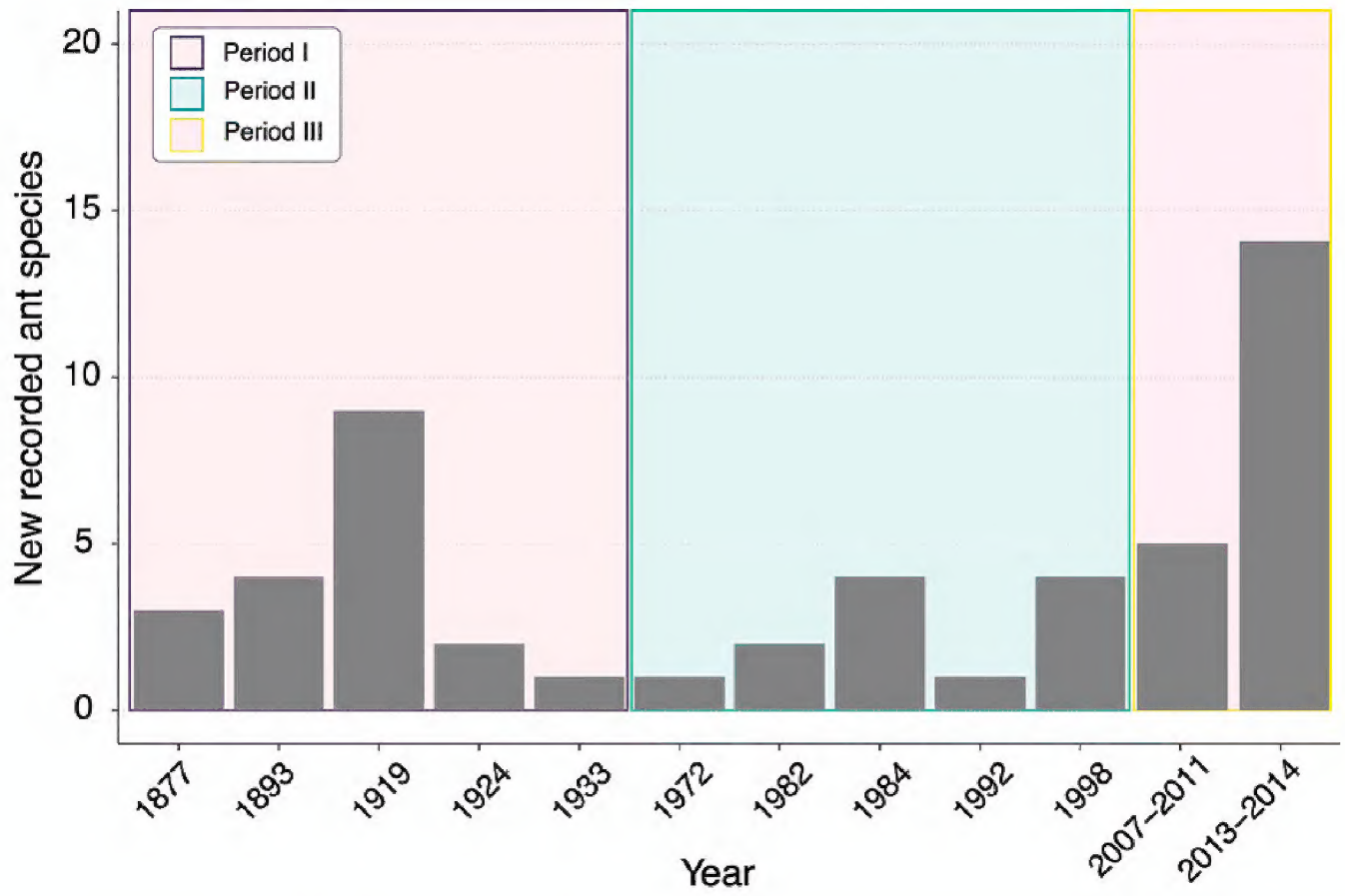


Figure 1. Delimitation of the three periods in the study of Galápagos ants. Period I: 1877–1933; Period II: 1933 until the end of the 1990's; Period III: 2000 onwards. The following references correspond to the years listed in the figure: 1877 = Smith (1877); 1893 = Emery (1893); 1919 = Wheeler (1919); 1924 = Wheeler (1924); 1933 = Wheeler (1933); 1972 = Silberglied (1972); 1982 = Clark et al. (1982); 1984 = Lubin (1984); 1992 = (Snelling and Longino 1992); 1998 = Pezzatti et al. (1998); 2007 – 2011 = Pacheco et al. (2007), Herrera and Longino (2008), Herrera and Causton (2010), Lattke (2011); 2013 – 2014 = Herrera et al. (2013, 2014).

Materials and methods

This paper is based on literature reviews and the study of 382,023 specimens deposited mostly in the Terrestrial Invertebrates Collection of the Charles Darwin Research Station (**ICCDRS**) as well as the collections of John T. Longino (**JTLC**), California Academy of Sciences (**CAS**), Quito Catholic Zoology Museum (**QCAZ**), the University of Texas Insect Collection (**UTIC**) and the Royal Belgian Institute of Natural Sciences (**RBINS**). We mapped the geographical distribution of the sampling events using the Free and Open Source QGIS. We revised and updated information on samples used for previous publications and indicated where this material is deposited. The list of subfamilies and species is ordered alphabetically. Specimens from the genus *Nylanderia* are currently under revision and are merged into *Nylanderia* spp. Accordingly, only previous literature records of *Nylanderia* species are included in the checklist. We implemented a similar approach for the only known from Galápagos subspecies of *Camponotus macilentus* Smith, 1877 and *Camponotus planus* Smith, 1877, for which the taxonomic key is only at species level. Neither the material examined, nor the vague descriptions found in old literature allowed us to morphologically discriminate between the proposed subspecies. The genus *Nylanderia* in Galápagos and the *Camponotus* (sub)species complexes will be addressed in future studies. Scanning images at high resolution were obtained using Scanning Electron Microscope (SEM) (Todokoro and Ezumi 1999) and z-stacked images available in AntWeb (Herrera 2019) were used to illustrate the key. Morphological terms referred to in the key (Fig. 2A–D), followed Eady (1968), Harris (1979), Bolton (1994), and Bolton et al. (2003). Locality terminology referring to

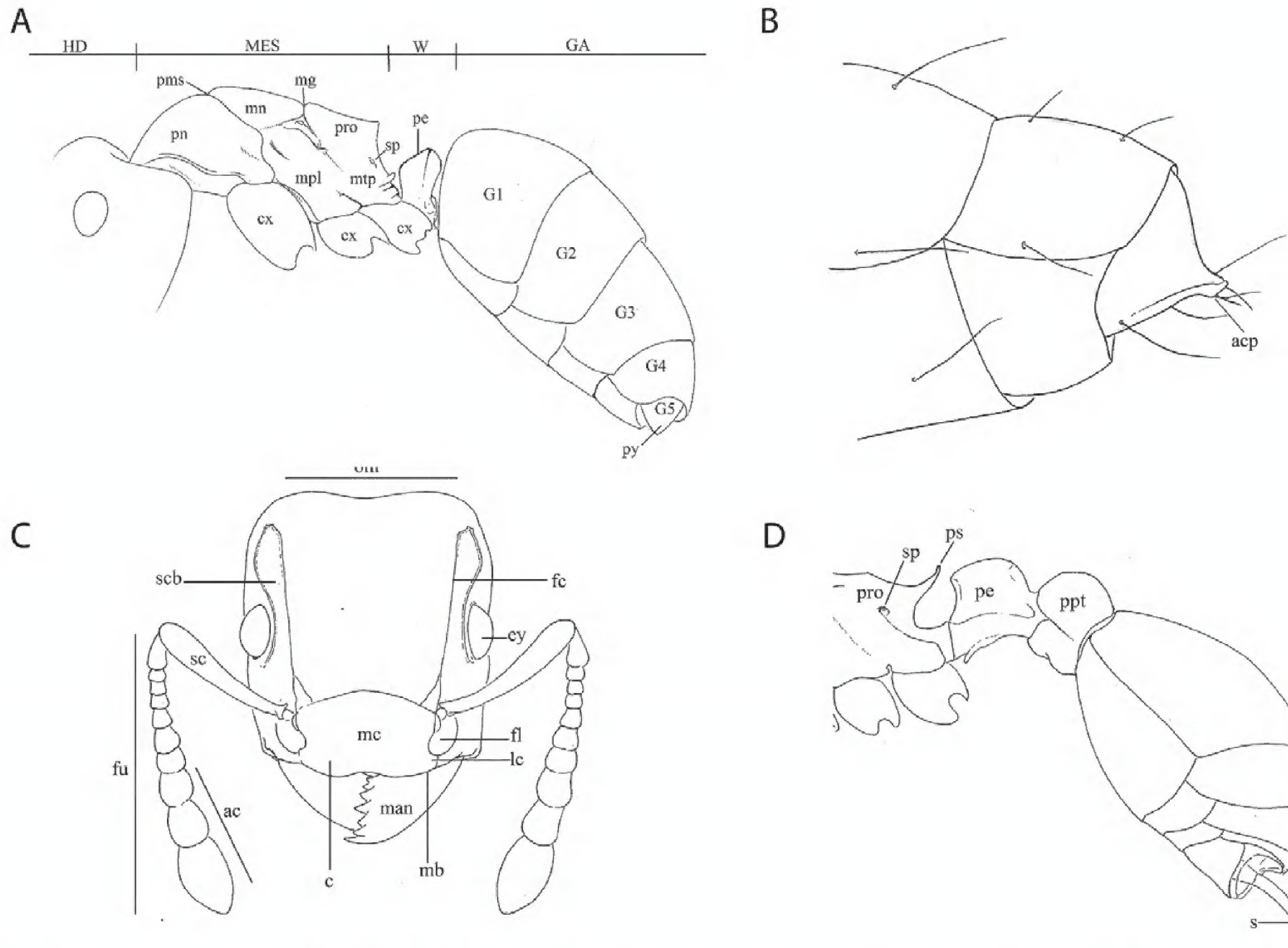


Figure 2. Glossary of terminology labeled from left to right **A** lateral view of a major worker of *Camponotus planus* **B** profile view of terminal portion of gaster of *Paratrechina longicornis* (Latreille, 1802) **C** frontal view of *Tetramorium bicarinatum* (Nylander, 1846) **D** lateral view of *Tetramorium bicarinatum*. Abbreviations: ac = antenna club; acp = acidopore; c = clypeus; cx = coxa; ey = eye; fc = frontal carina; fl = frontal lobe; fu = funiculus; GA = gaster; G1, 2, 3, 4, 5 = gastral segments 1–5; HD = head; lc = lateral portion of clypeus; man = mandible; mb = basal margin of mandible; mc = median portion of clypeus; MES = mesosoma; mg = metanotal groove; mn = mesonotum; mpl = mesopleuron; mtp = metapleuron; om = occipital margin; pe = petiole; pms = promesonotal; pn = pronotum; pro = propodeum; ppt = post-petiole; ps = propodeal spine; py = pygidium; s = sting; sc = scape scb = scrobe; sp = spiracle.

the different volcanoes on Isabela Island is as follows: Alcedo Crater (**CA**), Volcano Alcedo (**VA**), Volcano Ecuador (**VE**), Volcano Darwin (**VD**), Volcano Sierra Negra (**SN**), and Volcano Wolf (**VW**).

Results

Five subfamilies of Formicidae can be found in the Galápagos: Dolichoderinae, Dorylinae, Formicinae, Myrmicinae, and Ponerinae, representing 22 genera, 50 species and 25 subspecies. The subfamily Myrmicinae is the largest with 32 species, while only one species on the islands represents Dorylinae, *Cylindromyrmex whymperi* (Cameron, 1891). The introduced species *Solenopsis globularia* (Smith, 1858) (on 35 islands, islets, and/or rocks), *Tetramorium bicarinatum* (Nylander, 1846) (on 33), *Cardiocondyla emeryi* Forel, 1881 (on 30), *Monomorium floricola* (Jerdon, 1851) (on 27), *Camponotus zonatus* Emery, 1894 (on 24), *Tetramorium lanuginosum* Mayr, 1870 (on 24), *Wasmannia auropunctata* (on 21), *Solenopsis geminata* (Fabricius, 1804) (on 20), and

Tapinoma melanocephalum (Fabricius, 1793) (on 18), are the most widely distributed species in the archipelago. Among the putative endemic species (8, Herrera et al. 2020), *Leptogenys santacruzi* Lattke, 2011 is most rare, with only a few records from the islands of Santa Cruz and Santiago.

Discussion

We report 50 species and 25 subspecies of ants from 22 genera from the Galápagos Islands. The number of new species and locality records in the last 15 years combined with the fact that many islands are still highly understudied demonstrates that considerable work still needs to be done to identify and understand the islands' ant diversity.

Of the species recorded in this checklist, there are still dubious records. This is the case for *Camponotus senex*, *Crematogaster crinosa*, and *Solenopsis saevissima* (Wheeler 1924; Crocker 1933; Peck et al. 1998). Recent fieldwork, extensive studies and revision of old collections could not confirm their presence in the archipelago. Wheeler (1924) defined *C. senex* as a species that is unlikely to be present in the Galápagos, while Trager (1991) and Pacheco et al. (2007) did not mention *S. saevissima* as part of the fauna of the archipelago. Regarding *C. crinosa*, this species could have been sampled from locations outside the archipelago by Mr. Maurice Willows during the Templeton Crocker Expedition (Crocker 1933). Wheeler (1924) cataloged this record as unexpected in the Galápagos. These three species are not included in the taxonomic keys in this work. Furthermore, the records of *Anoplolepis gracilipes* (Smith, 1857), *Camponotus planatus* Roger, 1863, *Strumigenys godeffroyi* Mayr, 1866, *Tetramorium pacificum* Mayr, 1870, and *Pseudoponera stigma* (Fabricius, 1804) in the Galápagos (McGlynn 1999) are considered doubtful due to potential misidentification of these species. It is also possible that these species were collected on recently arriving in Galápagos and that they did not establish. As such, these species are not included in this species checklist.

Regarding the genus *Camponotus*, our studies suggest that the identification of the introduced ant *Camponotus zonatus* may have been confused with that of the only known from Galápagos species *C. macilentus*. This confusion is of particular interest regarding ecological studies that have cited the abundance of *C. macilentus*, which is typically more cryptic (McMullen 2011). Material examined retrospectively by the first author, collected by Pezzatti et al. (1998), von Aesch and Cherix (2005), and von Aesch (2006), showed that *C. zonatus* was collected during these field trips, nevertheless, this ant is not mentioned in any of these papers. Some of the records for the subspecies of *Camponotus* are also questioned for putative subspecies of *C. macilentus* and *C. planus* in the archipelago, and for now, we have only cited the records of Wheeler (1919, 1924, 1933) and Stitz (1932). Lastly, for the genus *Nylanderia*, future taxonomic and genetic studies are necessary to understand the number of species present and their status in Galápagos.

Although efforts in the last two decades have substantially increased our knowledge of the ant fauna of the Galápagos Islands, a good portion of the material studied during the last 15 years came from surveys that were not focused on ants. Ants remain poorly studied, and systematic sampling of the archipelago is necessary. Apart from Santa Cruz (in 1982, 1984) and Floreana (in 1997 and 2005) (Clark et al. 1982; Lubin 1984; Pezzatti et al. 1998; von Aesch 2006; HWH unpublished data), none of the other islands have been sampled extensively

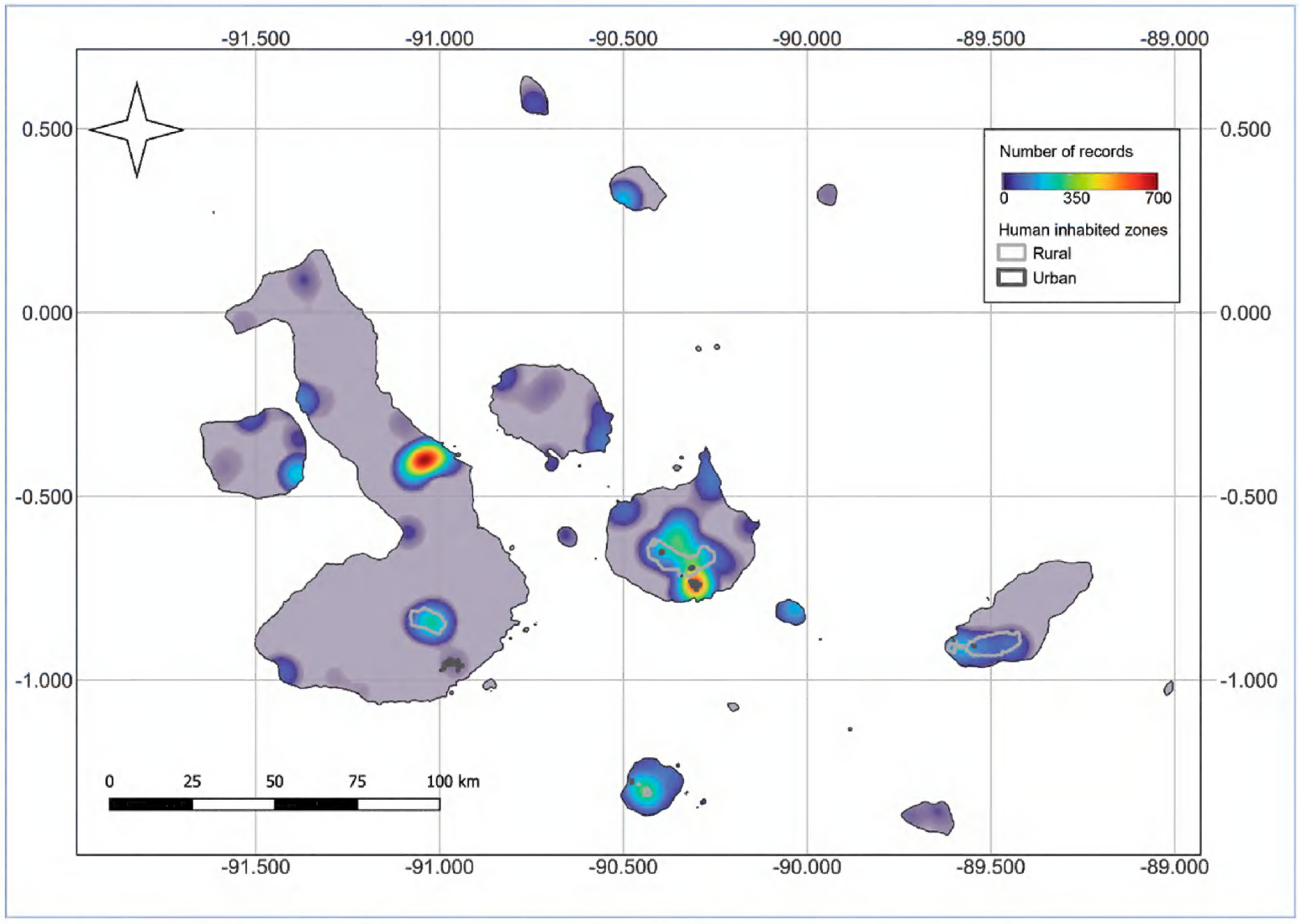


Figure 3. Heatmap highlighting the distribution of ant samples taken from 1963 to 2022. Regions indicated in pale purple have not yet been sampled for ants.

(Fig. 3). As a result, a multi-institutional project was initiated in 2020 to remedy this by surveying all islands. In addition, revision of taxonomic material in yet unexplored collections is underway. Revisions of these collections and systematic field surveys will provide the much-needed information to understand the role of ant species in ecosystem processes in the Galápagos as well as for prioritizing the management of introduced and invasive species and protecting endemic species.

Checklist and identification keys

Key to the subfamilies of the Galápagos Islands

1 Mesosoma attached to the gaster by a single intermediate segment, the petiole (Fig. 44C) **2**

– Mesosoma attached to the gaster by two intermediate segments, the petiole, and post-petiole (Fig. 36C) ..... **Myrmicinae**

2 Gaster with a slight to remarkable constriction between its first and second segments (Fig. 45C); in the first case mandibles elongated (Fig. 48C); last segment of the gaster with sting, sometimes visible **3**

– Gaster without constriction between its first and second segments (Fig. 8D); never with long and slender mandibles; last segment of the gaster without sting **4**

3 Pygidium with small spines or denticles (Fig. 7C); antennal scape short and robust, never surpassing the middle of the eyes; funiculus robust, with segments increasing progressively in size toward the apex; head in frontal view with frontal carinae very well marked, and with thick longitudinal ridges running from occipital margin towards the clypeus (Fig. 7D)..... ..... (**Dorylinae**) ***Cylindromyrmex whymperi***

– Pygidium without spines or denticles (Fig. 44D); antennal scape surpassing the middle of the eyes (long and slender); head in frontal view without ridges .....**Ponerinae**

4 Apex of abdomen with a circular orifice surrounded by a fringe of short setae, the acidopore, formed from the hypopygium (Fig. 8E) ...**Formicinae**

– Apex of abdomen without acidopore (Fig. 4D) ..... **Dolichoderinae**

Key to species and subspecies of the subfamily Dolichoderinae

1 In lateral and dorsal views, petiole visible (Fig. 4B, D); cluster of long hairs located in the ventral surface of the head, the psammophore (Fig. 4E); dorsopropodeum with cone (Fig. 4D); head and mesosoma reddish brown, gaster, funiculus of antenna, petiole, and legs brownish black (Fig. 5B) *Dorymyrmex*).....***Dorymyrmex pyramicus albemarlensis***

– Petiole squamiform and notably reduced, in lateral and dorsal view, hidden under the first segment of the gaster (Fig. 5B, E); psammophore lacking on the ventral surface of the head; propodeum without cone on the dorsum (Fig. 5D) (*Tapinoma*).....**2**

2 Small (~ 1.5 mm), head mesosoma and antennae pale brown, legs and gaster pale yellow (Fig. 5A, B); anterior margin of clypeus relatively straight (Fig. 5C).....***Tapinoma melanocephalum***

– Ants measuring ~ 2 mm with body and legs brown-gray (Fig. 6A, B); anterior base of clypeus slightly concave in the middle (Fig. 6C)..... .....***Tapinoma* sp. hh07**

Genus *Dorymyrmex* Mayr, 1866

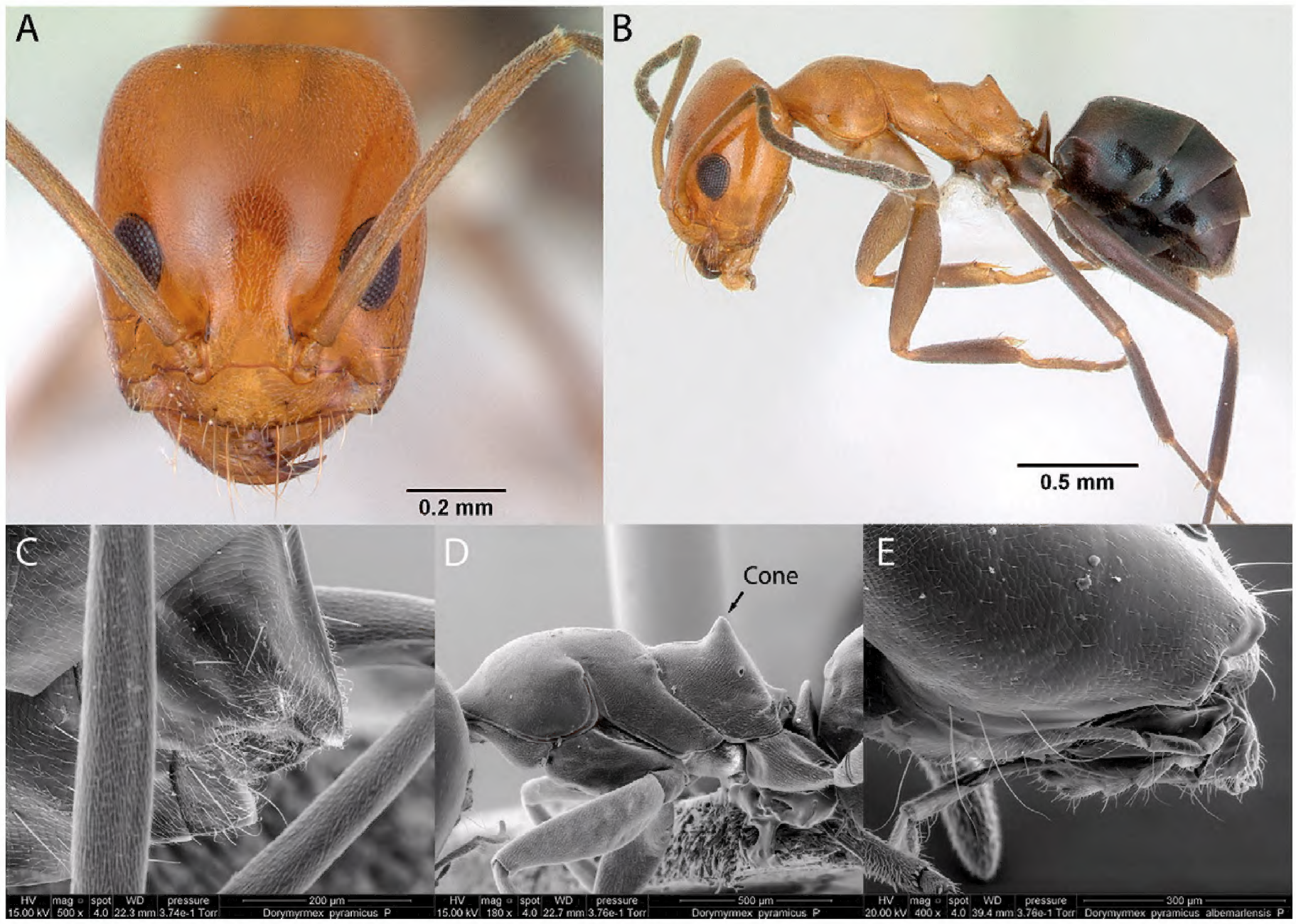
Dorymyrmex pyramicus albemarlensis Wheeler, 1919

Fig. 4

Remarks. In Wheeler (1924) [CAS], Wheeler (1933). Cited as *Conomyrma pyramica albemarlensis* (Linsley and Usinger 1966), *Conomyrma* sp. (Clark et al. 1982) [ICCDRS], *C. pyramica* (Lubin 1983), *C. albemarlensis*, *C. pyramica* (Lubin 1984), *C. albemarlensis* (Lubin 1985), *Conomyrma* sp. (Meier 1994), *Dorymyrmex pyramicus* (Abedrabbo 1994) [ICCDRS] and *C. albemarlensis* (de la Vega 1994). Registered also in Roque-Albelo et al. (2000) [ICCDRS], Herrera and Causton (2010) [ICCDRS], Herrera (2015), Herrera (2019) and Herrera et al. (2020) [ICCDRS, RBINS].

Taxonomic history. Kempf (1972), Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Possibly endemic: Baltra, Bartolomé, Daphne Mayor, Edén, Española, Fernandina, Genovesa, Isabela (VA, VD, VW), Marchena, Pinta, Rábida, Santa Cruz, Santa Fé, Santiago (Herrera et al. 2020).


A
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B
0.5 mm
C
D
Cone
E
HV mag spot WD pressure 200 µm
15.00 kV 500 x 4.0 22.3 mm 3.74e-1 Torr Dorymyrmex pyramicus P
HV mag spot WD pressure 500 µm
15.00 kV 180 x 4.0 22.7 mm 3.76e-1 Torr Dorymyrmex pyramicus P
HV mag spot WD pressure 300 µm
20.00 kV 400 x 4.0 39.4 mm 3.76e-1 Torr Dorymyrmex pyramicus albemarlensis P

Figure 4. *Dorymyrmex pyramicus albemarlensis* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** apex of abdomen **D** mesosoma in profile **E** maxillary and labial palps.

Genus *Tapinoma* Foerster, 1850

Tapinoma melanocephalum (Fabricius, 1793)

Fig. 5

Remarks. Originally described as *Formica melanocephalum* (Fabricius, 1793). First published record Emery (1893), cited also in Wheeler (1919) [CAS], Wheeler (1924), Linsley and Usinger (1966), Clark et al. (1982) [ICCDRS], Lubin (1984) [ICCDRS], McMullen (1987 1990, 1993), Abedrabbo (1994) [ICCDRS], Brandão and Paiva (1994), de la Vega (1994), Meier (1994) [ICCDRS], Peck et al. (1998), Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], von Aesch and Cherix (2005) [ICCDRS], Boada (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Causton et al. (2006), McMullen (2009), Herrera and Causton (2010) [ICCDRS], McMullen (2012), Chamorro et al. (2012) [ICCDRS], Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2016) [ICCDRS, RBINS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS, RBINS].

Taxonomic history. Kempf (1972), Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Albany, Baltra, Champion, Española, Fernandina, Floreana, Genovesa, Isabela (CA, SN, VA), Marchena, Pinta, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé (Herrera et al. 2020).

New record. Mariela Mediana Islet.

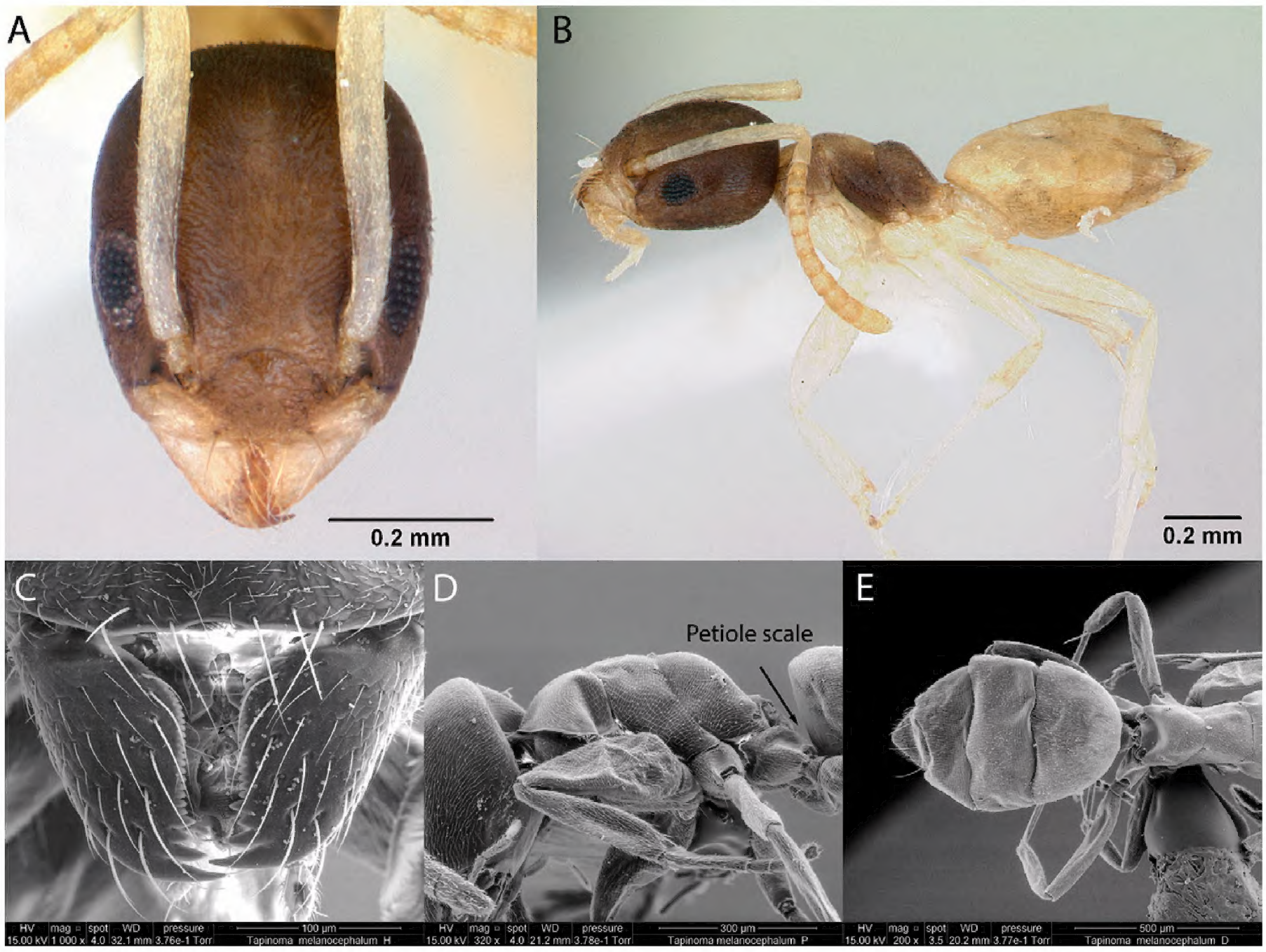


Figure 5. *Tapinoma melanocephalum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up mandibles showing dentition **D** mesosoma in profile **E** gaster in dorsal view.

***Tapinoma* sp. hh07**

Fig. 6

Remarks. In Herrera et al. (2014) [ICCDRS], Herrera (2015), and Herrera et al. (2020) [ICCDRS].

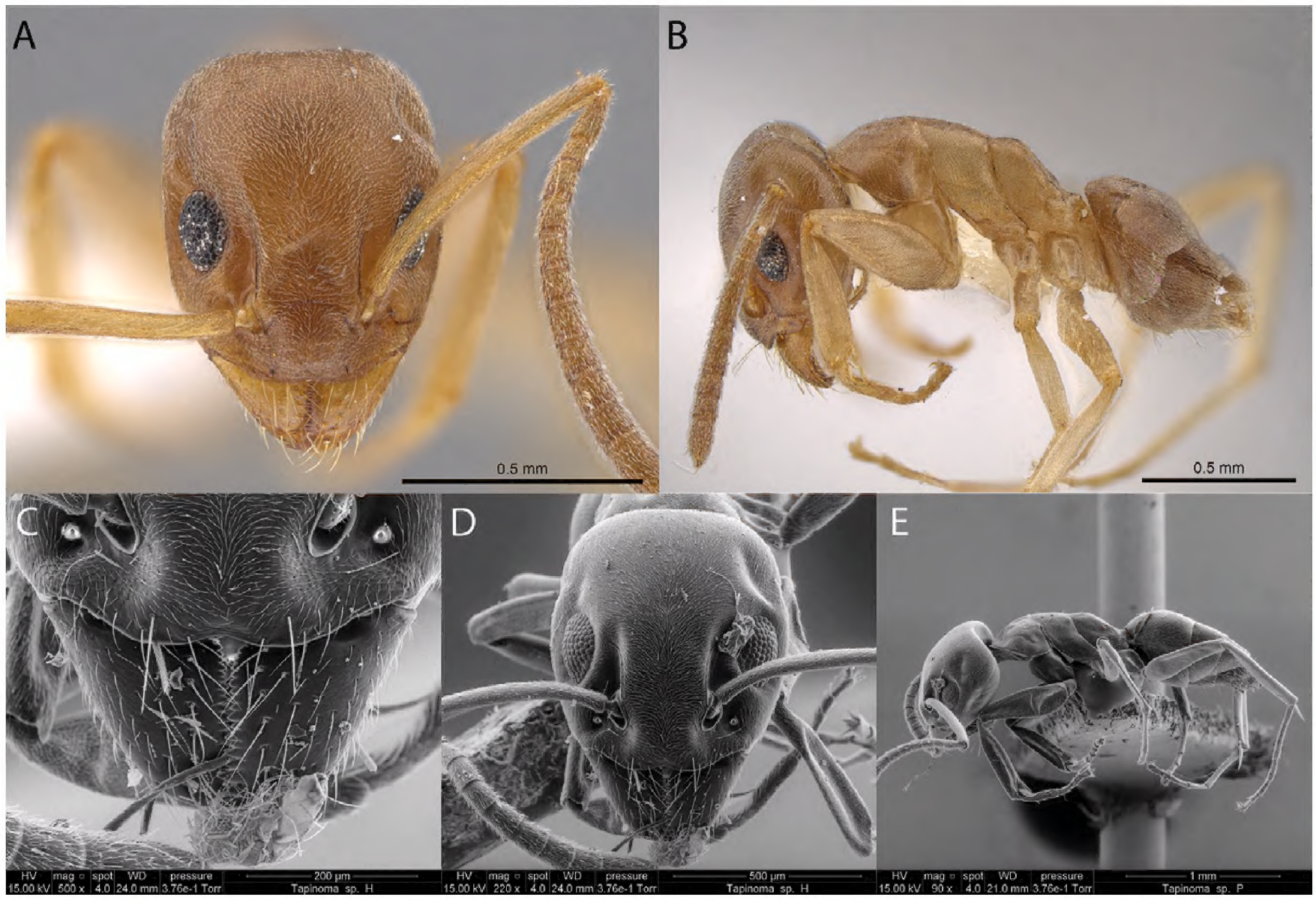
Distribution. Undetermined origin: Santa Cruz (Herrera et al. 2014).

Genus *Cylindromyrmex* Mayr, 1870

***Cylindromyrmex whymperi* (Cameron, 1891)**

Fig. 7

Remarks. Originally described as *Holcoponera whymperi* (Cameron, 1891). Cited as *Cylindromyrmex striatus* in Wheeler (1919) [CAS]. *Cylindromyrmex williamsi* in Wheeler (1924). *Cylindromyrmex striatus tibialis* in Stitz (1932). *Cylindromyrmex williamsi* in Linsley and Usinger (1966), *Cylindromyrmex* sp. in Silberglied (1972). *Cylindromyrmex striatus* in Lubin (1984), *Cylindromyrmex* sp. in de la Vega (1994). *Cylindromyrmex whymperi* in De Andrade (1998), *Cylindromyrmex striatus* in Causton et al. (2006), *Cylindromyrmex whymperi* Herrera and Causton (2010) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].


A
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B
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C
D
E
HV mag spot WD pressure 200 µm
15.00 kV 500 x 4.0 24.0 mm 3.76e-1 Torr Tapinoma sp. H
HV mag spot WD pressure 500 µm
15.00 kV 220 x 4.0 24.0 mm 3.76e-1 Torr Tapinoma sp. H
HV mag spot WD pressure 1 mm
15.00 kV 90 x 4.0 21.0 mm 3.76e-1 Torr Tapinoma sp. P

Figure 6. *Tapinoma* sp. hh07 worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up mandibles showing dentition **D** head in full-face view **E** view in profile.

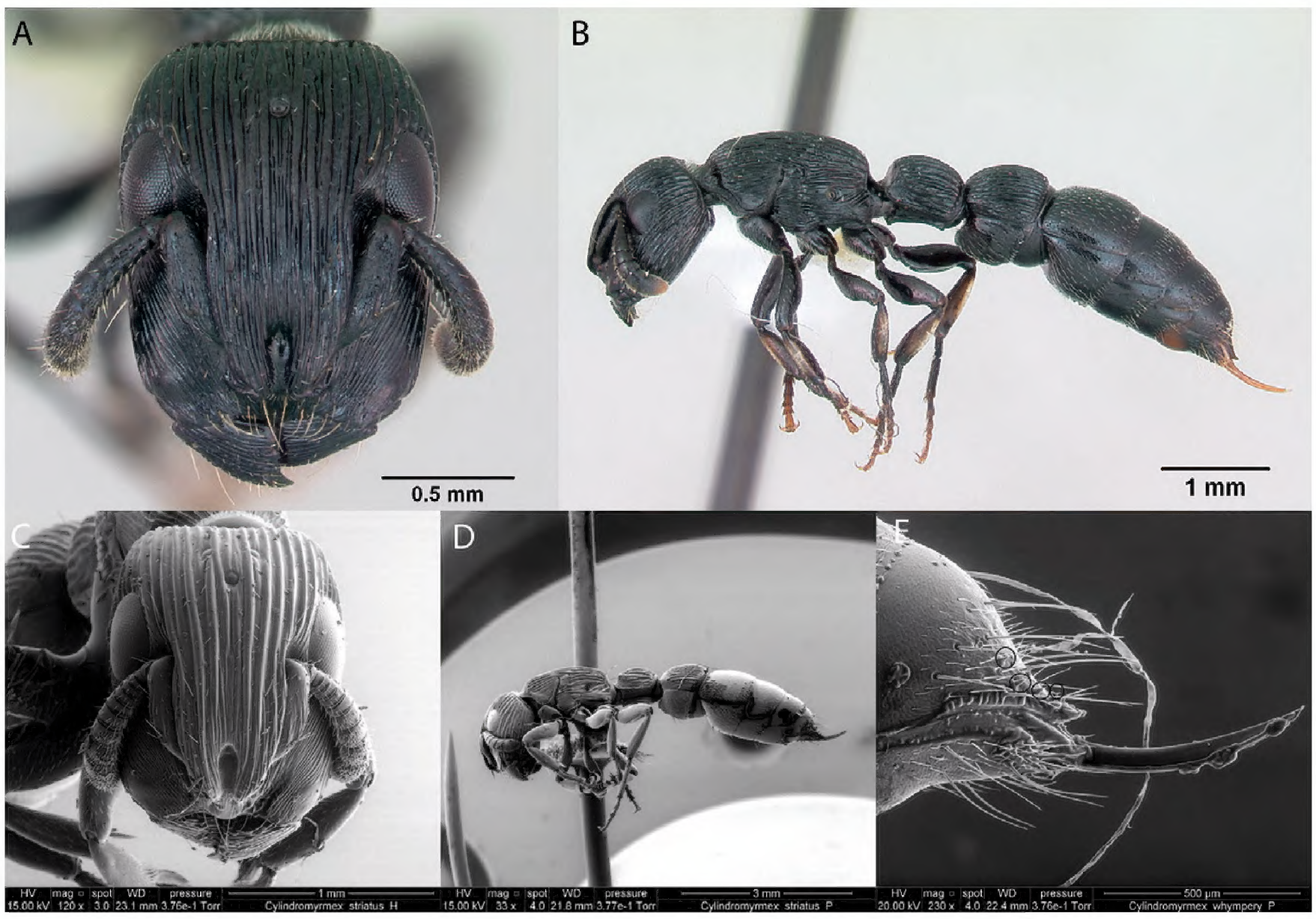
A
0.5 mm
B
1 mm
C
D
E
HV mag spot WD pressure 1 mm
15.00 kV 120 x 3.0 23.1 mm 3.76e-1 Torr Cylindromyrmex striatus H
HV mag spot WD pressure 3 mm
15.00 kV 33 x 4.0 21.8 mm 3.77e-1 Torr Cylindromyrmex striatus P
HV mag spot WD pressure 500 µm
20.00 kV 230 x 4.0 22.4 mm 3.76e-1 Torr Cylindromyrmex whymperi P

Figure 7. *Cylindromyrmex whymperi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** view in profile **E** stinging apparatus. The small circles indicate spines on the pygidium.

Taxonomic history. Kempf (1972), Bolton (1995, 2014), De Andrade (1998), Bolton et al. (2006).

Distribution. Neotropical.

Galápagos distribution. Introduced: Baltra, Fernandina, Isabela (VA, VW), Santa Cruz (Herrera and al. 2020).

New record. Santiago Island.

Key to the genera and species of the subfamily Formicinae

1 Antenna, including scape, with 9 segments (Fig. 8C) (*Brachymyrmex*) ..... ***Brachymyrmex heeri***

– Antenna, including scape, with > 9 segments (Fig. 11C) **2**

2 Polymorphic, minor workers > 4 mm (total length); antennal insertions located distantly from posterior margin of the clypeus (Fig. 11D); head in dorsal view with frontal carinae (Fig. 11D) (*Camponotus*) **3**

– Monomorphic, workers of small size, < 4 mm (total length), with antennal insertions located near to posterior margin of clypeus (Fig. 12A, C); head in dorsal view with frontal carinae hardly visible (Fig. 11C) **5**

3 In lateral view, promesonotum and dorsum of propodeum flat; propodeal declivity angulate (Fig. 11E); short and erect hairs distributed evenly along mesosoma; head, mesosoma, and gaster black with antennae and legs reddish (Fig. 11A, B) ..... ***Camponotus planus***

– In lateral view, promesonotum and propodeum rounded until the base of the declivity of propodeum, forming a single convexity (Figs 9B, E,10B, C); long and erect hairs distributed unevenly along mesosoma; ants yellowish (Figs 9B, 10B) **4**

4 Longitudinal carina visible in middle of the clypeus (major workers); head in frontal view with frontal carinae closing towards the middle of eyes; mesosoma with > 10 erect hairs (Fig. 9B, E) ..... ***Camponotus zonatus***

– Longitudinal carina in the middle of clypeus inconspicuous or absent (major workers); head in frontal view with frontal carinae opening from base of fronto-clypeal suture towards middle of eyes; mesosoma with < 10 erect hairs (Fig. 10B, C)..... ***Camponotus macilentus***

5 Scape obviously elongate without erect setae and extending at least twice the length of the head in lateral view (Fig. 13D); mandibles with 5 teeth; mesosoma smooth with absence of appressed hairs (Fig. 13B, E) (*Paratrechina*) ..... ***Paratrechina longicornis***

– Scape with abundant erect setae and never extending twice the length of the head in lateral view (Fig. 12C, D); mandible with 6 or 7 teeth; mesosoma with appressed hairs (Fig. 12E) (*Nylanderia*) **6**

6 Head, mesosoma, gaster and legs dark brown with trochanters yellowish; mesopleuron and metapleuron smooth and shiny (Fig. 12A, B) ..... ***Nylanderia steinheili***

– Species without combination of characteristics described above ..... ***Nylanderia* spp.**

Genus *Brachymyrmex* Mayr, 1868

***Brachymyrmex heeri* Forel, 1874**
Fig. 8

Remarks. First published record in Herrera and Longino (2008) [ICCDRS]. Cited as *Brachymyrmex* sp. in Causton et al. (2006). *Brachymyrmex heeri* in Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2014) [ICCDRS], Wauters et al. (2016) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Nearctic, Neotropical, and Palearctic.

Galápagos distribution. Introduced: Floreana, Isabela (SN, VE), Marchena, San Cristóbal, Santa Cruz (Herrera et al. 2020).

Genus *Camponotus* Mayr, 1861

***Camponotus zonatus* Emery, 1894**
Fig. 9

Remarks. First published record (Herrera and Causton 2010) [ICCDRS]. Cited in Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2016) [RBINS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS, RBINS].

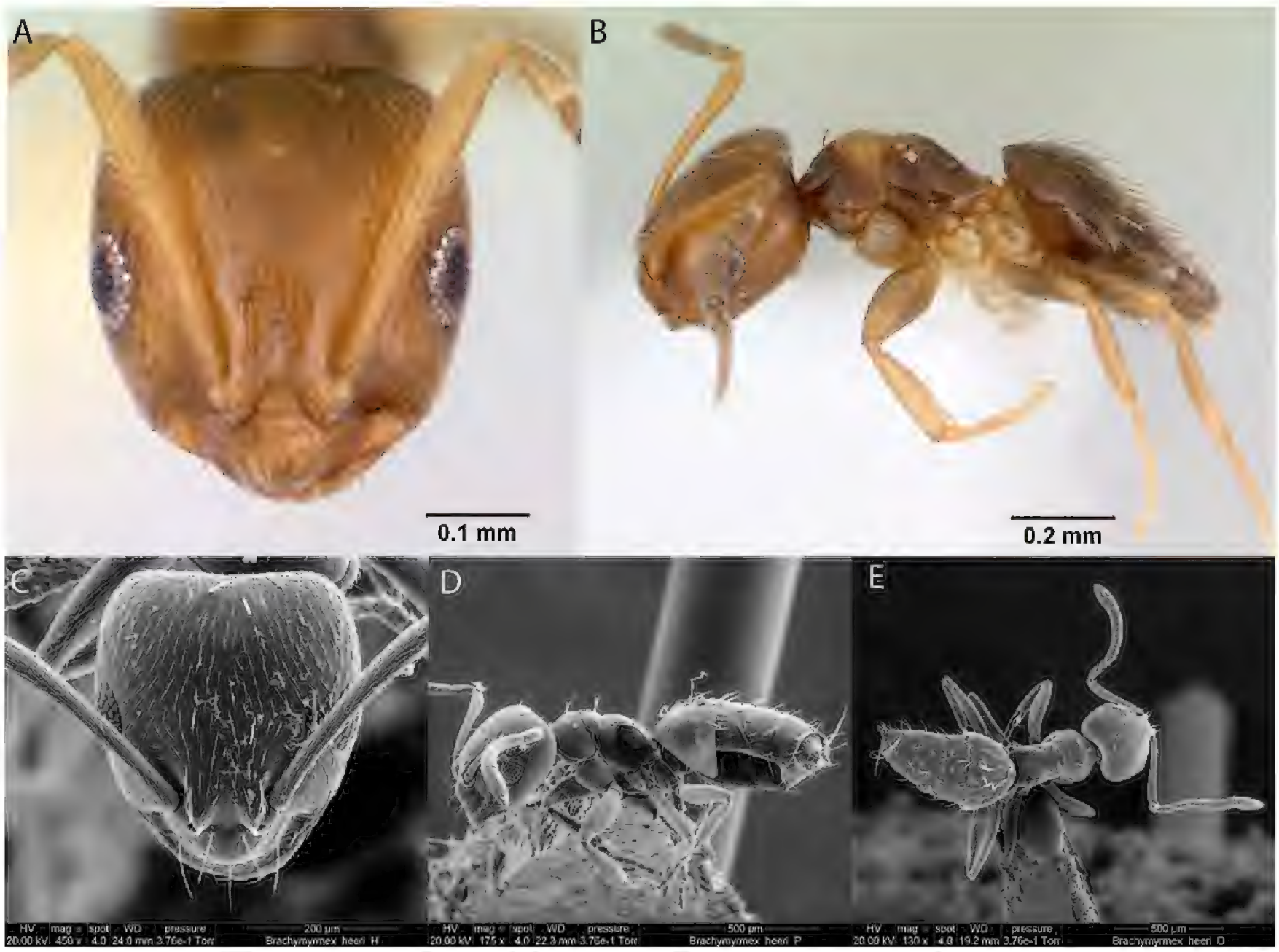

Figure 8. *Brachymyrmex heeri* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** view in profile **E** head and antenna in dorsal view.

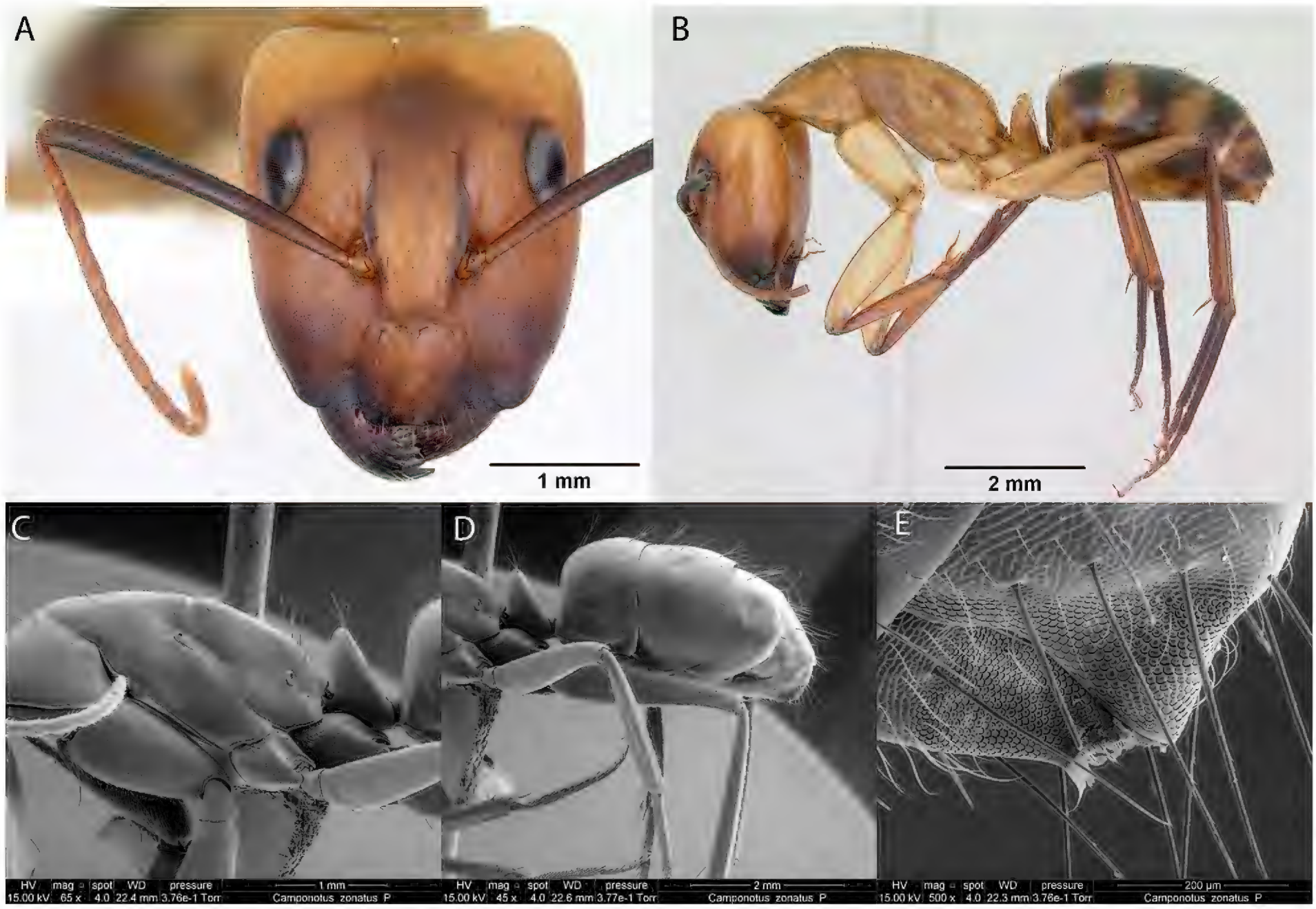

Figure 9. *Camponotus zonatus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** gaster in profile view **E** close up of acidopore.

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Neotropical.

Galápagos distribution. Introduced: Bainbridge #1, Bainbridge #3, Bainbridge #4, Bainbridge #5, Bainbridge #6, Baltra, Champion, Cuevas, Daphne Mayor, Eden, Floreana, Genovesa, Isabela (CA, SN, VA, VD, VW), Mao, Marchena, Pinta, Pinzón, Plaza Norte, Plaza Sur, San Cristóbal, Santa Cruz, Santa Fé, Santiago, Seymour Norte (Herrera et al. 2020).

Camponotus macilentus Smith, 1877

Fig. 10

Remarks. Cited as *Camponotus* (*Myrmamblys*) *macilentus* in Wheeler (1919). *Camponotus* (*Pseudocolobopsis*) *macilentus* in Emery (1920). *Camponotus* (*Pseudocolobopsis*) *macilentus macilentus* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* in Kempf (1972). *Camponotus macilentus* in Clark et al. (1982), Lubin (1983) [ICCDRS], Lubin (1984, 1985), Brandão and Paiva (1994), Meier (1994), Peck (1994b), Bolton (1995), Roque-Albelo et al. (2000) [ICCDRS], Boada (2005) [ICCDRS], McMullen (2011, 2012). Misidentification in Pezzatti et al. (1998) [ICCDRS], von-Aesch and Cherix (2005), von Aesch (2006) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, RBINS].

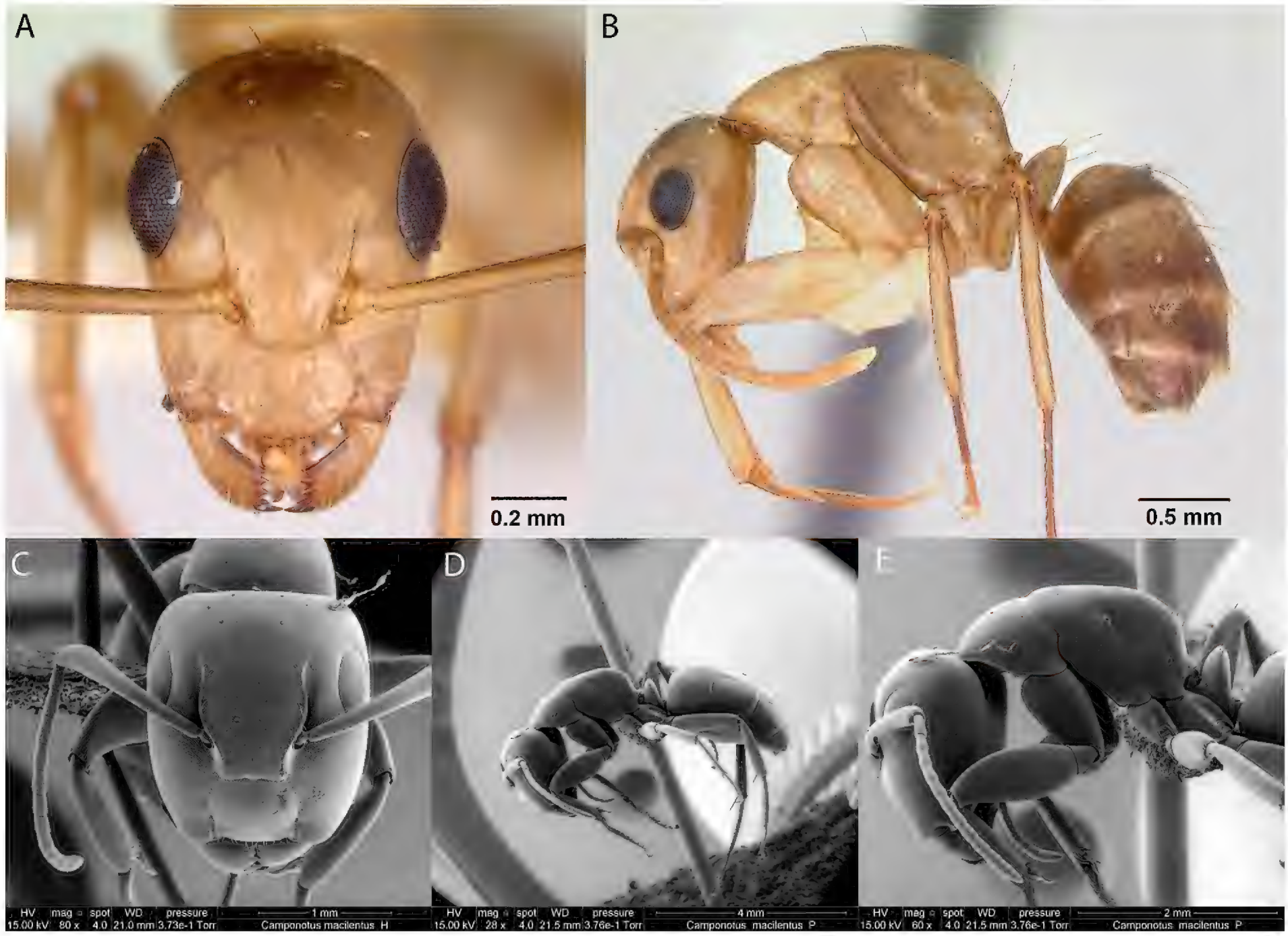

Figure 10. *Camponotus macilentus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** view in profile **E**. mesosoma and head profile view.

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Baltra, Champion, Española, Fernandina, Floreana, Genovesa, Isabela (SN, VA, VD, VW), Marchena, Pinta, Pinzón, Plaza Norte, Rábida, Santa Cruz, Santa Fé, Santiago, (Herrera and al. 2020).

Citations.

***Camponotus macilentus albemarlensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *albemarlensis* Wheeler, 1919: 284. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *albemarlensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus albemarlensis* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *albemarlensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus albemarlensis* in (Bolton, 1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Isabela Island.

***Camponotus macilentus altinotus* Stitz, 1932**. Cited as *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *altinota* Stitz, 1932: 370. *Camponotus* (*Pseudocolobopsis*) *macilentus altinotus* in Linsley and Usinger (1966). *Camponotus macilentus* var. *altinotus* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus altinotus* in (Bolton, 1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Floreana Island (Stitz 1932).

***Camponotus macilentus barringtonensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *barringtonensis* Wheeler, 1919: 282. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *barringtonensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus barringtonensis* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *barringtonensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus barringtonensis* in (Bolton, 1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Santa Fé Island (Wheeler 1919).

***Camponotus macilentus bindloensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *bindloensis* Wheeler, 1919: 286. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *bindloensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus bindloensis* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *bindloensis* in Kempf (1972), *Camponotus* (*Pseudocolobopsis*) *macilentus bindloensis* in Bolton (1995). *Camponotus macilentus bindloensis* in Herrera (2015, 2019).

Taxonomic history. Bolton et al. (2006), Bolton (2014).

Distribution. Endemic: Marchena Island (Wheeler 1919).

***Camponotus macilentus castellanus* Wheeler, 1924**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *castellanus* Wheeler, 1924: 116. Cited as *Camponotus* (*Pseudocolobopsis*) *macilentus castellanus* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *castellanus* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus castellanus* Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Genovesa Island (Wheeler 1924).

***Camponotus macilentus duncanensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *duncanensis* Wheeler, 1919: 283. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *duncanensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus duncanensis* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *duncanensis* in Kempf (1972). *Camponotus macilentus duncanensis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Floreana, Pinzón Islands (Wheeler 1919, Stitz 1932).

***Camponotus macilentus hoodensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *hoodensis* Wheeler, 1919: 285. Cited ad *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *hoodensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus hoodensis* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *hoodensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus hoodensis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Española Island (Wheeler 1919).

***Camponotus macilentus jacobensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *jacobensis* Wheeler, 1919: 280. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *jacobensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus jacobensis* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *jacobensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus jacobensis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Santiago Island (Wheeler 1919).

***Camponotus macilentus narboroensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *narboroensis* Wheeler, 1919: 286. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *narboroensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus narboroensis* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *narboroensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus narboroensis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Fernandina Island (Wheeler 1919, 1933).

***Camponotus macilentus pervicus* Wheeler, 1924**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *pervicus* Wheeler, 1924: 115. *Camponotus* (*Pseudocolobopsis*) *macilentus pervicus* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus pervicus* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus pervicus* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Santa Cruz Island (Wheeler 1924).

***Camponotus macilentus sapphirinus* Wheeler, 1924**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *sapphirinus* Wheeler, 1924: 114. Cited as *Camponotus* (*Pseudocolobopsis*) *macilentus sapphirinus* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *sapphirinus* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus sapphirinus* in Bolton (1995), Herrera (2015).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Santa Cruz, Baltra Islands (Wheeler 1924).

***Camponotus macilentus vulcanalis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *vulcanalis* Wheeler, 1919: 284. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *vulcanalis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus vulcanalis* in Linsley and Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *vulcanalis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus vulcanalis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Isabela Island (Wheeler 1919).

***Camponotus macilentus wollebaeki* Stitz, 1932**. Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *wollebaeki* Stitz, 1932: 371. *Camponotus* (*Pseudocolobopsis*) *macilentus wollebaeki* in Linsley and Usinger (1966). *Camponotus macilentus* var. *wollebaeki* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus wollebaeki* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Floreana Island (Stitz 1932).

Camponotus planus Smith, 1877

Fig. 11

Remarks. Cited as *Camponotus* (*Myrmorhachis*) *planus* in Wheeler (1919), Emery (1920). *Camponotus* (*Myrmocladoecus*) *planus* in Wheeler (1924), Stitz (1932). *Camponotus* (*Myrmocladoecus*) *planus planus* in Linsley and Usinger (1966).

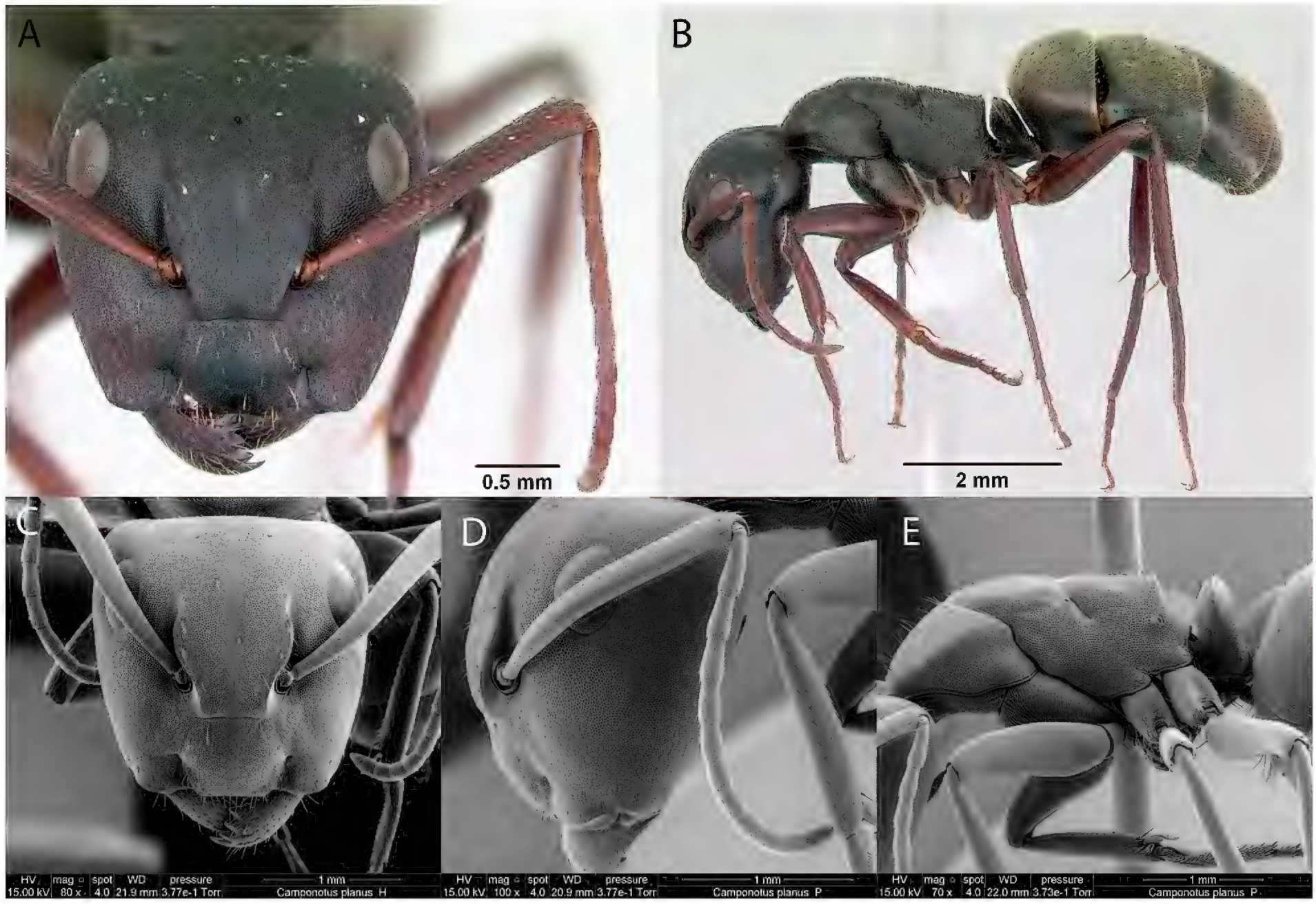

Figure 11. *Camponotus planus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** head profile view **E** mesosoma in profile.

Camponotus (*Myrmocladoecus*) *planus* in Kempf (1972). *Camponotus planus* in Clark et al. (1982) [ICCDRS], Lubin (1983, 1984, 1985) [ICCDRS], McMullen (1993), Brandão and Paiva (1994), de la Vega (1994), Meier (1994) [ICCDRS]. *Camponotus* (*Myrmocladoecus*) *planus* in Bolton (1995). *Camponotus planus* in Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], von Aesch and Cherix (2005) [ICCDRS], Boada (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Jaramillo et al. (2010), Herrera and Causton (2010) [ICCDRS], Chamorro et al. (2012) [ICCDRS], Herrera (2015, 2019) [ICCDRS] and Wauters (2016) [ICCDRS; RBINS].

Taxonomic history. Kempf (1972), Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Bainbridge #1, Baltra, Bartolomé, Cousin, Fernandina, Floreana, Isabela (CA, SN, VA, VD, VE, VW), Logie, Marchena, Pinzón, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé (Herrera et al. 2020).

Citations.

***Camponotus planus fernandinensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *fernandinensis* Wheeler, 1919: 296. *Camponotus* (*Myrmocladoecus*) *planus fernandinensis* in Linsley and Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *fernandinensis* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus fernandinensis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Fernandina Island (Wheeler 1919).

***Camponotus planus fidelis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *fidelis* Wheeler, 1919: 295. *Camponotus* (*Myrmocladoecus*) *planus* var. *fidelis* in Emery (1925). *Camponotus* (*Myrmocladoecus*) *planus fidelis* in Linsley and Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *fidelis* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus fidelis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Santa Fé (Wheeler 1919).

***Camponotus planus hephaestus* Wheeler, 1933**. Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *hephaestus* Wheeler, 1933: 59. *Camponotus* (*Myrmocladoecus*) *planus hephaestus* in Linsley and Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *hephaestus* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus hephaestus* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Isabela Island (Wheeler 1933).

***Camponotus planus indefessus* Wheeler, 1919**. Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *indefessus* Wheeler, 1919: 294. *Camponotus* (*Myrmocladoecus*) *planus indefessus* in Linsley and Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *indefessus* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus indefessus* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Santa Cruz Island (Wheeler 1919).

***Camponotus planus isabelensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *isabelensis* Wheeler, 1919: 293. *Camponotus* (*Myrmocladoecus*) *planus isabelensis* in Linsley and Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *isabelensis* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus isabelensis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Isabela Island (Wheeler 1919, 1933).

***Camponotus planus peregrinus* Emery, 1893**. Cited as *Camponotus peregrinus* Emery, 1893: 91. *Camponotus* (*Myrmorhachis*) *planus peregrinus* in Wheeler (1919). *Camponotus* (*Myrmocladoecus*) *planus* var. *peregrinus* in Wheeler (1924), Stitz (1932). *Camponotus* (*Myrmocladoecus*) *planus peregrinus* in Linsley and Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *peregrinus* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus peregrinus* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Floreana, San Cristóbal Island (Wheeler 1919; Stitz 1932; Wheeler 1933).

***Camponotus planus pinzonensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *pinzonensis* Wheeler, 1919: 297. *Camponotus* (*Myrmocladoecus*) *planus* var. *pinzonensis* in Emery (1925). *Camponotus* (*Myrmocladoecus*) *planus pinzonensis* in Linsley and Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *pinzonensis* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus pinzonensis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Pinzón Island (Wheeler 1919).

***Camponotus planus sansalvadorensis* Wheeler, 1924**. Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *sansalvadorensis* Wheeler, 1924: 119. Cited

as *Camponotus* (*Myrmocladoecus*) *planus sansalvadorensis* in Linsley and Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *sansalvadorensis* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus sansalvadorensis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Santiago Island (Wheeler 1924).

***Camponotus planus santacruzensis* Wheeler, 1919**. Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *santacruzensis* Wheeler, 1919: 294. *Camponotus* (*Myrmocladoecus*) *planus* var. *santacruzensis* in Wheeler (1924). *Camponotus* (*Myrmocladoecus*) *planus santacruzensis* in Linsley and Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *santacruzensis* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus santacruzensis* in Bolton (1995), Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Endemic: Santa Cruz, Baltra Island (Wheeler 1919, 1924, 1933).

***Camponotus senex* (Smith, 1858).** Originally described as *Formica senex* (Smith, 1858). Cited in Smith (1877), Wheeler (1919). Doubtful record for Galápagos (Wheeler 1924). Cited also in Linsley and Usinger (1966), Kempf (1972), Brandão and Paiva (1994) and Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Neotropical.

Galápagos distribution. Uncertain: San Cristóbal Island (Smith 1877).

Genus *Nylanderia* Emery, 1906

Nylanderia fulva nesiotis (Wheeler, 1919)

Remarks. Cited as *Prenolepis fulva nesiotis* in Wheeler (1919, 1924, 1933) [CAS]. As *Paratrechina fulva nesiotis* in Linsley and Usinger (1966) and *Nylanderia fulva nesiotis* in Kempf (1972), *Paratrechina nesiotis* in Lubin (1983, 1984, 1985), see also Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Neotropical.

Galápagos distribution. Introduced: Española, Isabela, Santiago, San Cristobal, Santa Cruz (Wheeler 1919, 1924, 1933).

Nylanderia guatemalensis itinerans (Forel, 1901)

Remarks. Cited as *Prenolepis vividula guatemalensis itinerans* in Wheeler (1919, 1924), *Nylanderia vividula guatemalensis* var. *itinerans* in Wheeler (1933) [CAS], *Paratrechina vividula itinerans* in Linsley and Usinger (1966), *Nylanderia guatemalensis* var. *itinerans* in Kempf (1972), *Paratrechina vividula itinerans* in Brandão and Paiva (1994) and *Paratrechina guatemalensis itinerans* in Pezzatti et al. (1998). See also Herrera (2015, 2019).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Neotropical.

Galápagos distribution. Introduced: Floreana, San Cristobal, Santa Cruz (Wheeler 1919, 1924, 1933).

***Nylanderia steinheili* (Forel, 1893)**
Fig. 12

Remarks. Cited as *Prenolepis steinheili* in (Forel, 1893). First record in Herrera et al. (2014), cited also in Dekoninck et al. (2014), Herrera (2015a. b), Wauters et al. (2016) [ICCDRS].

Taxonomic history. Kempf (1972), Brandão (1991), Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Malagasy, Nearctic, Neotropical.

Galápagos distribution. Introduced: Floreana, Gardner (next to Floreana), Isabela (CA), Pinzón, San Cristóbal, Santa Cruz (Herrera et al. 2014, 2020) [ICCDRS].

New record. Santiago Island.

***Nylanderia vaga* (Forel, 1901)**

Remarks. Cited as *Prenolepis vaga* in (Forel, 1901). Cited as *Paratrechina vaga* in Clark et al. (1982), McMullen (1987), McMullen (1990), McMullen (1993), Causton et al. (2006) and McMullen (2007). Cited as possibly *N. vaga* in Pezzatti et al. (1998).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Figure 12. *Nylanderia steinheili* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** view in profile **E** mesosoma in profile.

Distribution. Australasia, Indomalaya, Neotropical, Oceania.

Galápagos distribution. Introduced: Floreana, Santa Cruz, Pinta (Clark et al. 1982; McMullen 1987 1990, 1993, 2007).

Genus *Paratrechina* Motschoulsky, 1863

Paratrechina longicornis (Latreille, 1802)

Fig. 13

Remarks. Cited as *Formica longicornis* in (Latreille, 1802). Cited as *Prenolepis longicornis* (Latreille, 1802) in Wheeler (1919), Wheeler (1924) and Stitz (1932). *Paratrechina longicornis* in Wheeler (1933) [CAS], Kempf (1972), Linsley and Usinger (1966), Lubin (1984) [ICCDRS], McMullen (1987), McMullen (1990), McMullen (1993), Brandão and Paiva (1994), Meier (1994) [ICCDRS], Pezzatti et al. (1998) [ICCDRS], von Aesch and Cherix (2005) [ICCDRS], Causton et al. (2006) [ICCDRS], von Aesch (2006) [ICCDRS]. Also, in Herrera and Causton (2010) [ICCDRS]. Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2016) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, RBINS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

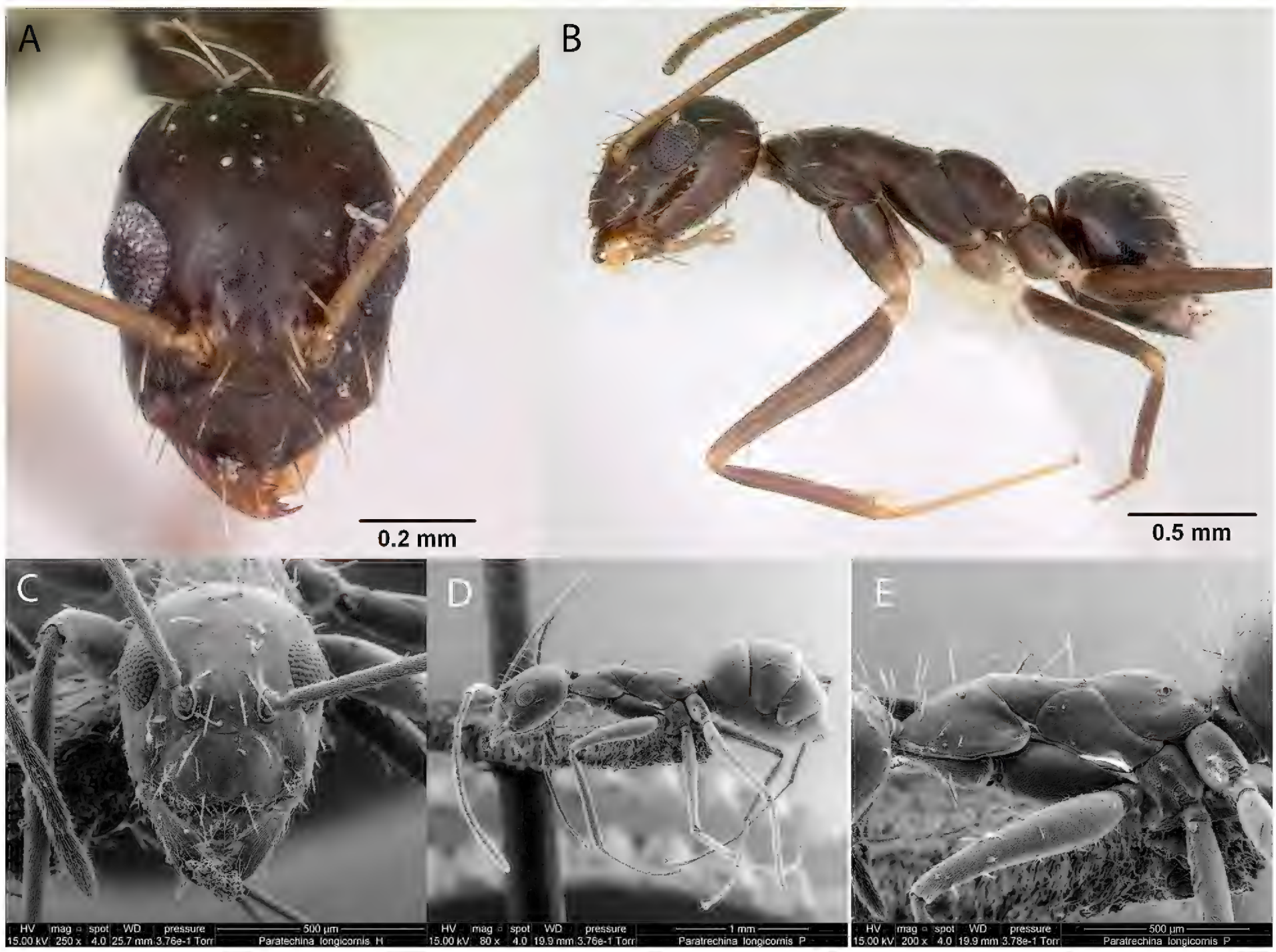

Figure 13. *Paratrechina longicornis* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** view in profile **E** mesosoma in profile.

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Baltra, Bartolomé, Champion, Española, Fernandina, Floreana, Gardner (next to Española), Isabela (SN, VA), Marchena, Pinta, Rábida, Santiago, San Cristóbal, Santa Cruz, Santa Fé, Seymour Norte (Herrera et al. 2020).

Key to the genera and species of the subfamily Myrmicinae

1 Postpetiole attached to the dorsal surface of the first segment of the gaster (*Crematogaster*) (Fig. 17C) ..... ***Crematogaster* JTL – 022**

– Postpetiole attached on anterior surface of the first segment of the gaster (Figs 14C, 40C) **2**

2 Antenna with 12 segments, scape included (Fig. 14D) **3**

– Antenna with < 12 segments: scape included (Figs 18C, 33C) **19**

3 Antennal club of two segments (Fig. 14D); triangular mandible equipped with a tooth at the basal margin; median portion of clypeus bicarinate with 2 clypeal teeth in the anterior clypeal margin, pointing to the apical margin of the mandibles when these are almost closed (Fig. 14E). Eye composed of 3 ommatidia (Fig. 14F) (*Adelomyrmex*) ..... ***Adelomyrmex longinoi***

– Antennal club diffuse or with 2 or 3 segments (Fig. 42A, C); mandible triangular with absence of teeth on the basal margin; pair of apical teeth at the anterior margin of clypeus absent (Fig. 42D) **4**

4 Propodeum without spines (Figs 21C, 22F) **5**

– Propodeum armed with spines (Figs 16C, 38C, 37C) **8**

5 Posterior surface of the head and propodeal dorsum transversely striate (Fig. 42E, F) (*Trichomyrmex*) ..... ***Trichomyrmex destructor***

– Posterior surface of the head and propodeal dorsum not transversely striate (Figs 22D, 23D); (*Monomorium*) **6**

6 Head, mesosoma and gaster smooth and shiny (Fig. 21A, B, D, E); in lateral view mesosoma with > 4 erect setae (Fig. 21C); bicolored with mesosoma pale brown, head and gaster dark brown (Fig. 21A, B) ..... ***Monomorium floricola***

– Head and mesosoma neither smooth nor shiny (Figs 22A, C, D, E, 23C, D, E); in lateral view mesosoma with ≤ 4erect setae (Fig. 22D), in dorsal and lateral view with appressed hairs (Fig. 23D, E) **7**

7 In lateral or dorsal view, pronotum with a pair of erect setae (Fig. 22D, E), in lateral view post-petiole almost the same size as petiole (Fig. 22B, F); ant yellowish in its entirety (Fig. 22B) ..... ***Monomorium pharaonis***

– In lateral or dorsal view, pronotum without a pair of erect setae, only appressed pubescence present (Fig. 23E, D); in lateral view post-petiole slightly dilated, 1.5 times larger than petiole (Fig. 23B, F); bicolored with head, mesosoma, and legs reddish yellow and gaster dark brown (Fig. 23B) ..... ***Monomorium* cf. *pharaonis***

8 Antennal scrobes very well marked, extending posteriorly past the eyes (Fig. 37D); frontal carina clearly differentiated to extending tenuously until or near to the occipital corners (Fig. 41C) (*Tetramorium*) **9**

– Antennal scrobes absent (Figs 15C, 28C); frontal carinae short and never extending posteriorly past the eyes (Figs 13C, 28D) **13**

9 Propodeal spines long, strong, and acute (Figs 37C, 41D).....**10**
– Propodeal spines short and not acute (Figs 38C, 40C) **12**
10 Sculpture on the cephalic dorsum of the head strigose (Fig. 41E); body dark brown to black; legs, antennae, and mandibles pale brown (Fig. 41A) ..... ***Tetramorium lucayanum***
– Sculpture on the cephalic dorsum of the head alveolate or areolate (Fig. 37E); yellowish and reddish ants (Figs 37B, 38B, 39B, 40B) **11**
11 Anterior clypeal margin with a distinct median notch or impression; median portion of the clypeus with 3 longitudinal carinae (Fig. 37E); head, mesosoma, waist and gaster covered by numerous thick erect and suberect hairs (Fig. 37B, C, F); bicolored with gaster dark (Fig. 37B)..... ..... ***Tetramorium bicarinatum***
– Anterior clypeal margin without a median notch or impression (Fig. 39C); median portion of the clypeus with a central carina weak or discontinuously marked (Fig. 39B); head, mesosoma, waist, and gaster densely covered by a fine and long white pilosity (Fig. 39D, E, F); entirely reddish (Fig. 39B).....***Tetramorium lanuginosum***
12 Frontal carinae very well marked (Fig. 40D); antennal scrobes shallow, broad and conspicuous (Fig. 40E) mesosoma with < 10 erect hairs ....***Tetramorium simillimum***
– Frontal carinae not well marked, scrobes vestigial, feebly developed (Fig. 38D, E); mesosoma with > 10 erect hairs .....***Tetramorium caldarium***
13 Head in full-face view and mesosoma in dorsal view strigose (Fig. 28C, E); mesosoma in lateral view clearly convex, without sutures impressed on the dorsum (Fig. 28B, E); eyes composed of 5 ommatidia (Fig. 28D) (*Rogeria*)..... ***Rogeria curvipubens***
– Head in full-face view and mesosoma in dorsal view with variable sculpturing, but never uniformly strigose; mesosoma with notopropodeal suture present and grooved in lateral view (Slightly reduced to absent in *Cardiocondyla minutior*); number of ommatidia variable **14**
14 Monomorphic worker caste; dorsal view of the head and mesosoma densely foveolate with small appressed hairs (Figs 15C, D, 16D, F); promesonotum flat or slightly convex (Figs 15E, 16C); anterior margin of clypeus projected over the basal margin of the mandibles (Fig. 16E); in dorsal view, post-petiole spherical and notably dilated in comparison with petiole (Fig. 15F) *Cardiocondyla*) **15**
– Polymorphic worker caste; dorsal view of the head with the occipital corners smooth and shiny (major workers) (Fig. 27C); promesonotum convex (Fig. 25C); anterior margin of clypeus not projected over the basal margin of the mandibles (Fig. 25D); postpetiole never spherical (Fig. 26C) (*Pheidole*).....**16**
15 Metanotal groove not impressed on the dorsum of mesosoma (Fig. 16C, F); head, mesosoma, and gaster dark brown; propodeal spines short (Fig. 16C, B) .....***Cardiocondyla minutior***
– Metanotal groove impressed on the dorsum of mesosoma (Fig. 15D, E); mesosoma pale brown or orange, contrasting with darker gaster; propodeal spines longer and more acute than above (Fig. 15E) .... ***Cardiocondyla emeryi***

16 Major workers orange to reddish; total length ~ 2 mm (Figs 24B, 27B)....**17**
– Major workers dark brown to brown; total length ~ 2.5 mm (Figs 25B, 26B).....**18**
17 Major workers: head in frontal view with antennal scrobe weakly developed and alveolate (Fig. 24D, E); mesosoma in lateral view alveolate (Fig. 24C, E)..... ***Pheidole flavens***
– Major workers: head in frontal view with antennal scrobe absent (Fig. 27A, C, B); mesosoma in lateral view, with the pronotum in major proportion smooth and shiny (Fig. 27B, D), but rugulose and alveolate between the mesonotum and propodeum (Fig. 27D) .....***Pheidole* hh01**
18 Promesonotum in lateral view convex until it reaches the metanotal groove (Fig. 25C); post-petiole hexagonal in dorsal view exaggeratedly swollen relative to petiole (Fig. 25E); subpostpetiolar process slightly bulging (Fig. 25F) .....***Pheidole megacephala***
– Promesonotum in lateral view forming two convexities, truncated before reaching the metanotal groove (Fig. 26D); postpetiole not swollen compared to petiole (Fig. 26E); subpostpetiolar process absent or reduced (Fig. 26F)..... ***Pheidole williamsi***
19 Antenna with 10 or 11 segments (Figs 29C, 43C).....**20**
– Antenna with < 6 segments (Fig. 33F), (*Strumigenys*) **24**
20 Antenna with 10 segments; funiculus with 2-segmented club (Fig. 29C); antennal scrobes absent (Fig. 30C); propodeum without spines (Fig. 31C) (*Solenopsis*) **21**
– Antenna with 11 segments (Figs 18C, 43E); funiculus with a diffuse 3-segmented club (Figs 18C, 43C) antennal scrobes present (Figs 19E, 43E); spines on propodeum present or not (Figs 20C, 43D) **27**
21 Large (Fig. 29B), second and usually third segments of funiculus at least 1½ times as long as broad (Fig. 29A, C); petiole with thin flange ventrally; dark brown to black (Fig. 29B) .....***Solenopsis geminata***
– Smaller (Figs 30B, 31B, 32B), second and third segments of funiculus at most only slightly longer than broad, usually broader than long (Fig. 31D); petiole lacking flange ventrally, reddish to orange and dark brown (Figs 30B, 31B, 32B) **22**
22 Postpetiole greatly dilated, wider than petiole (seen from above), globose; eye with 15–25 ommatidia (Fig. 30D, E) .....***Solenopsis globularia***
– Postpetiole not dilated nor globose (Fig. 32C); eye with 3–5 ommatidia (Fig. 31D) **23**
23 In full face view, occipital margin of the head slightly concave (Fig. 31E); anterior clypeal margin with the median portion concave and oriented onward; frontal lobes longitudinally striated (Fig. 31E) .....***Solenopsis gnoma***
– In full face view, occipital margin of the head relatively straight to convex rather than concave (Fig. 32E); anterior clypeal margin with the median portion erect and not oriented onward; frontal lobes smooth and shiny, not striated (Fig. 32E)..... ***Solenopsis* cf. *basalis* (hh06)**
24 Mandibles long and straight (Figs 33C, 35C) **25**
– Mandibles short and curved downwards in profile, otherwise triangular (Figs 34D, 36C) **26**

25 Mandibles with a small preapical tooth, without denticles on inner border (Fig. 35C); head and mesosoma with appressed spatulate hairs (Figs 34E, 35D, E, F) ..... ***Strumigenys louisianae***

– Mandibles armed with small denticles on inner border (Fig. 33C); head and mesosoma without appressed (spatulate) circular hairs (Fig. 33D, E) ..... ***Strumigenys eggersi***

26 Triangular mandibles armed with denticles (Fig. 36A); antenna with 6 segments, head and mesosoma with few appressed hairs (Fig. 36D); petiole and post-petiole with spongiform tissue (Fig. 36E) ..... ***Strumigenys membranifera***

– Mandibles in appearance curved and short, armed with an apical fork (Fig. 33D); antenna with four segments (Fig. 33C); head and mesosoma with appressed spatulate hairs (Fig. 33E); petiole and post-petiole without spongiform tissue ..... ***Strumigenys emmae***

27 Head in frontal view with the antennal insertions hidden under the frontal lobes, which are exceptionally broad or expanded (Figs 18C, 20A, D); promesonotum tuberculated and propodeum unarmed by spines (Figs 18D; 19C, 20C); first segment of the gaster covered with appressed hairs, dull and opaque (Figs 19E, 20E) (*Cyphomyrmex*)..... **28**

– Head in full face view with the antennal insertions partly visible (Fig. 43A); frontal lobes not distended; promesonotum not tuberculated (Fig. 43D); propodeum armed with a pair of acute spines (Fig. 43D); first segment of the gaster smooth and shiny with few erect setae (Fig. 43F) (*Wasmannia*)..... ***Wasmannia auropunctata***

28 Pair of tubercles absent in the anterior median region of the pronotum (Fig. 18E); dark brown (Fig. 18B)..... ***Cyphomyrmex nesiotus***

– Pair of tubercles present in the anterior median region of the pronotum (Figs 19D, 20E)..... **29**

29 In dorsal view, propodeal declivity with a pair of tubercles located at the level of spiracles (Fig. 20E, F); head and body black (Fig. 20B) ..... ***Cyphomyrmex* sp. hh04**

– In dorsal view, propodeal declivity without a pair of tubercles situated at level of spiracles (Fig. 19C, D); head and gaster brown, mesosoma and legs pale brown (Fig. 19B) ..... ***Cyphomyrmex rimosus***

Genus *Adelomyrmex* Emery, 1897

***Adelomyrmex longinoi* Fernández, 2003**

Fig. 14

Remarks. Misidentification in Herrera and Longino (2008). Cited in Longino (2012) and Herrera (2015, 2019) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Central America.

Galápagos distribution. Introduced: Isabela Island (Herrera et al. 2014).

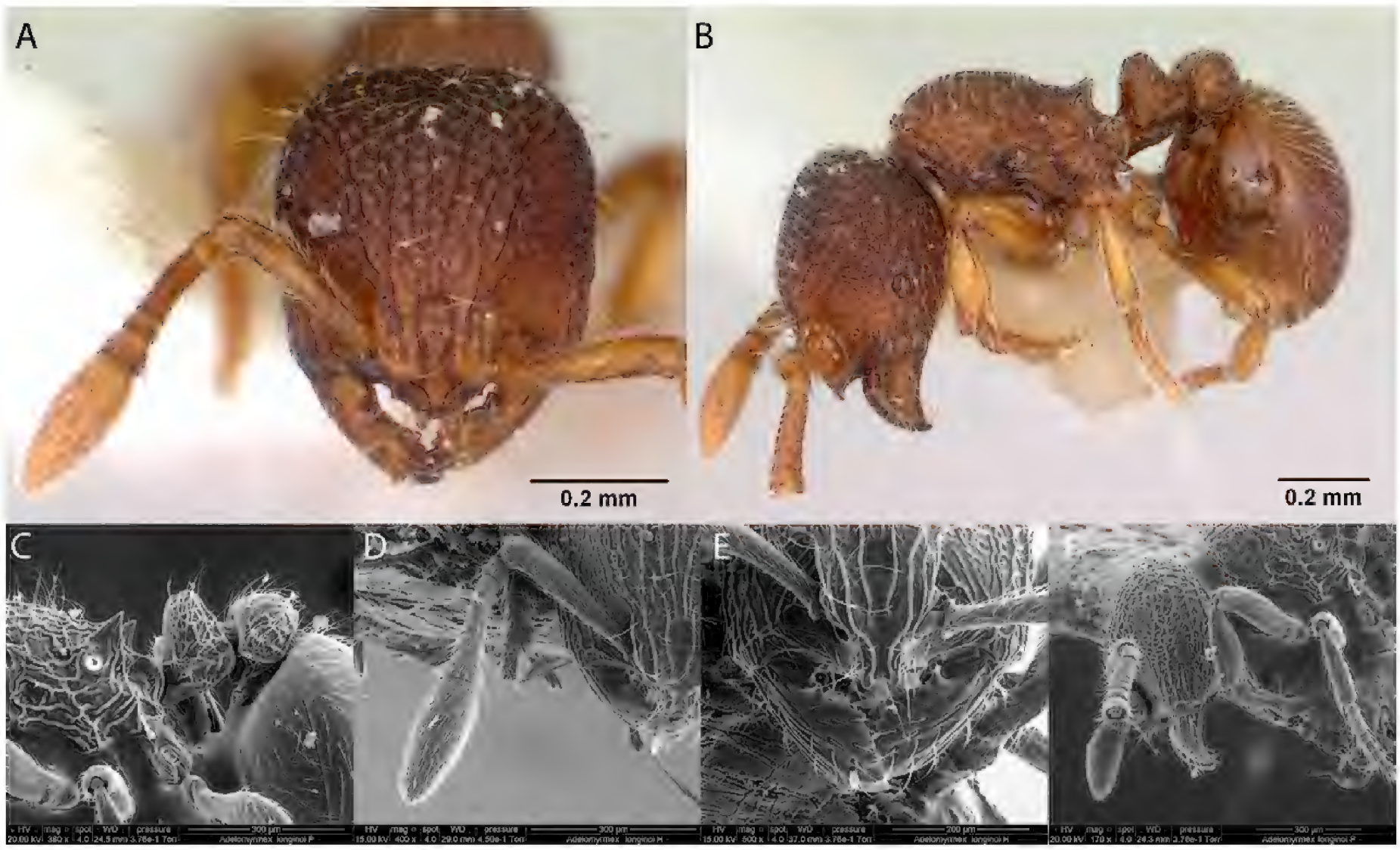

Figure 14. *Adelomyrmex longinoi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** propodeum, petiole and postpetiole in profile **D** antennae in front view **E** mandibles in front view **F** head in profile.

Genus *Cardiocondyla* Emery, 1869

***Cardiocondyla emeryi* Forel, 1881**
Fig. 15

Remarks. Cited in Lubin (1984), Lubin (1985), Pezzatti et al. (1998), Roque-Albelo et al. (2000) [ICCDRS], von Aesch and Cherix (2005), von Aesch (2006) [ICCDRS], Causton et al. (2006), McMullen (2007), Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2016) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS; RBINS]. Probably *C. minutior* or *C. emeryi* in Peck (1994a) and Peck (1994b).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Albany, Bainbridge #1, Bainbridge #3, Bainbridge #4, Bainbridge #5, Bainbridge #6, Bainbridge #8, Bar, Cousin, Darwin, Eden, Fernandina, Floreana, Gardner (next to Floreana), Genovesa, Gran Felipe, Isabela (CA, SN, VA, VD, VE, VW), Mariela Grande, Mao, Marchena, Pinta, Pinzón, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé, Wolf (Herrera et al. 2020).

***Cardiocondyla minutior* Forel, 1899**
Fig. 16

Remarks. Cited as *Cardiocondyla nuda* in Lubin (1984), Lubin (1985), [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], Pezzatti et al. (1998) [ICCDRS], von Aesch

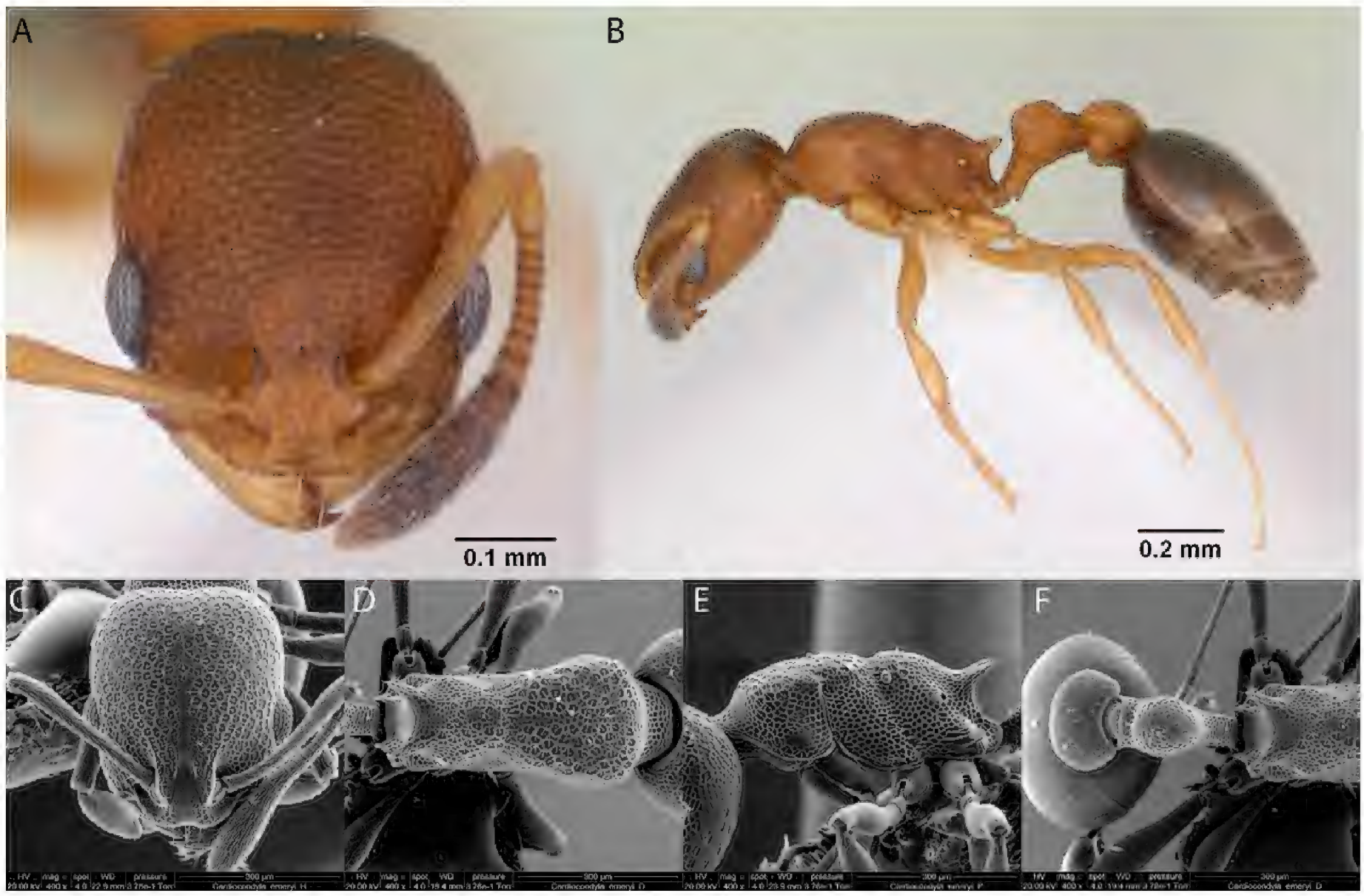

Figure 15. *Cardiocondyla emeryi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in dorsal view **E** mesosoma in profile **F** propodeum, petiole and postpetiole in dorsal view.

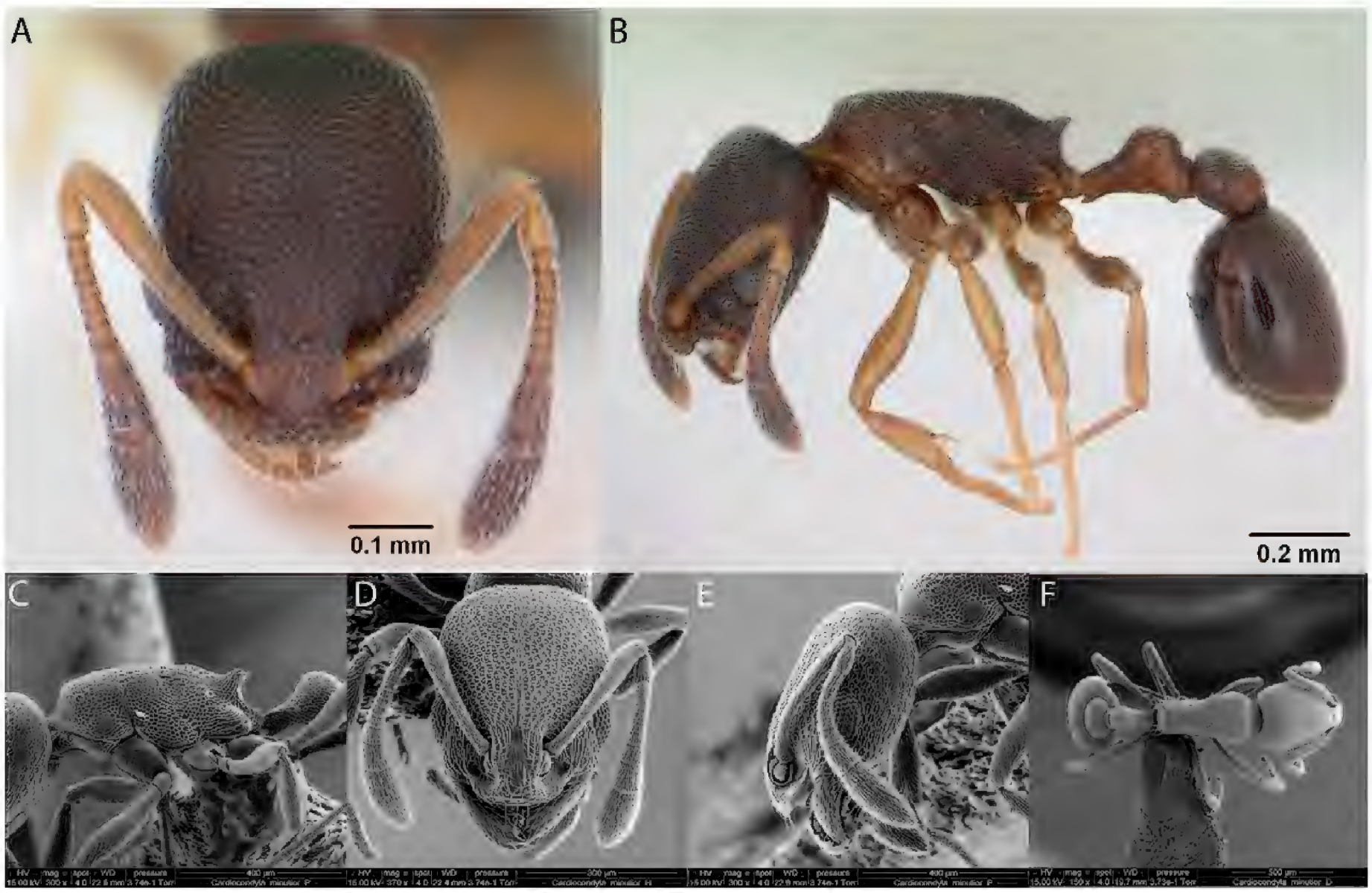

Figure 16. *Cardiocondyla minutior* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in full-face view **E** head in profile **F** mesosoma in dorsal view.

and Cherix (2005), von Aesch (2006) [ICCDRS]. Cited as *C. nuda* in Causton et al. (2006). Probably *C. minutior* in McMullen (1993). *Cardiocondyla minutior* or *C. emeryi* in Peck (1994a, 1994b). *Cardiocondyla minutior* in Wauters et al. (2016), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania.

Galápagos distribution. Introduced: Bainbridge #1, Cousin, Daphne Mayor, Darwin, Fernandina, Floreana, Gardner (next to Floreana), Isabela (CA, SN, VA, VD, VE), Mariela Grande, Marchena, Pinta, Santiago, San Cristóbal, Santa Cruz, Santa Fé, Wolf (Herrera et al. 2020).

Genus *Crematogaster* Lund, 1831

Crematogaster crinosa Mayr, 1862

Remarks. Cited as *Crematogaster* (*Orthocrema*) *brevispionsa chatamensis* in Wheeler (1933), Kempf (1972), Linsley and Usinger (1966). *Crematogaster chatamensis* in Lubin (1984). *Crematogaster crinosa* in Longino (2003) [CAS], Herrera et al. (2014), Herrera (2015, 2019) and Herrera et al. (2020).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Neotropical.

Galápagos distribution. Uncertain: San Cristóbal (Wheeler 1933).

Genus *Crematogaster* Lund, 1831

Crematogaster JTL-022

Fig. 17

Remarks. First published record Herrera et al. (2014), cited also in Traveset et al. (2013), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, JTLC].

Distribution. Introduced: San Cristóbal Island (Herrera et al. 2014, 2020).

Genus *Cyphomyrmex* Mayr, 1862

Cyphomyrmex nesiotus Snelling & Longino, 1992

Fig 18

Remarks. Cited in Snelling and Longino (1992), Herrera and Longino (2008), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, JTLC].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Probably endemic: Isabela (Snelling and Longino 1992).

Cyphomyrmex rimosus (Spinola, 1851)

Fig. 19

Remarks. First published record Herrera and Longino (2008) [ICCDRS]. Cited also in Dekoninck et al. (2014), Wauters et al. (2016), Herrera (2015, 2019)

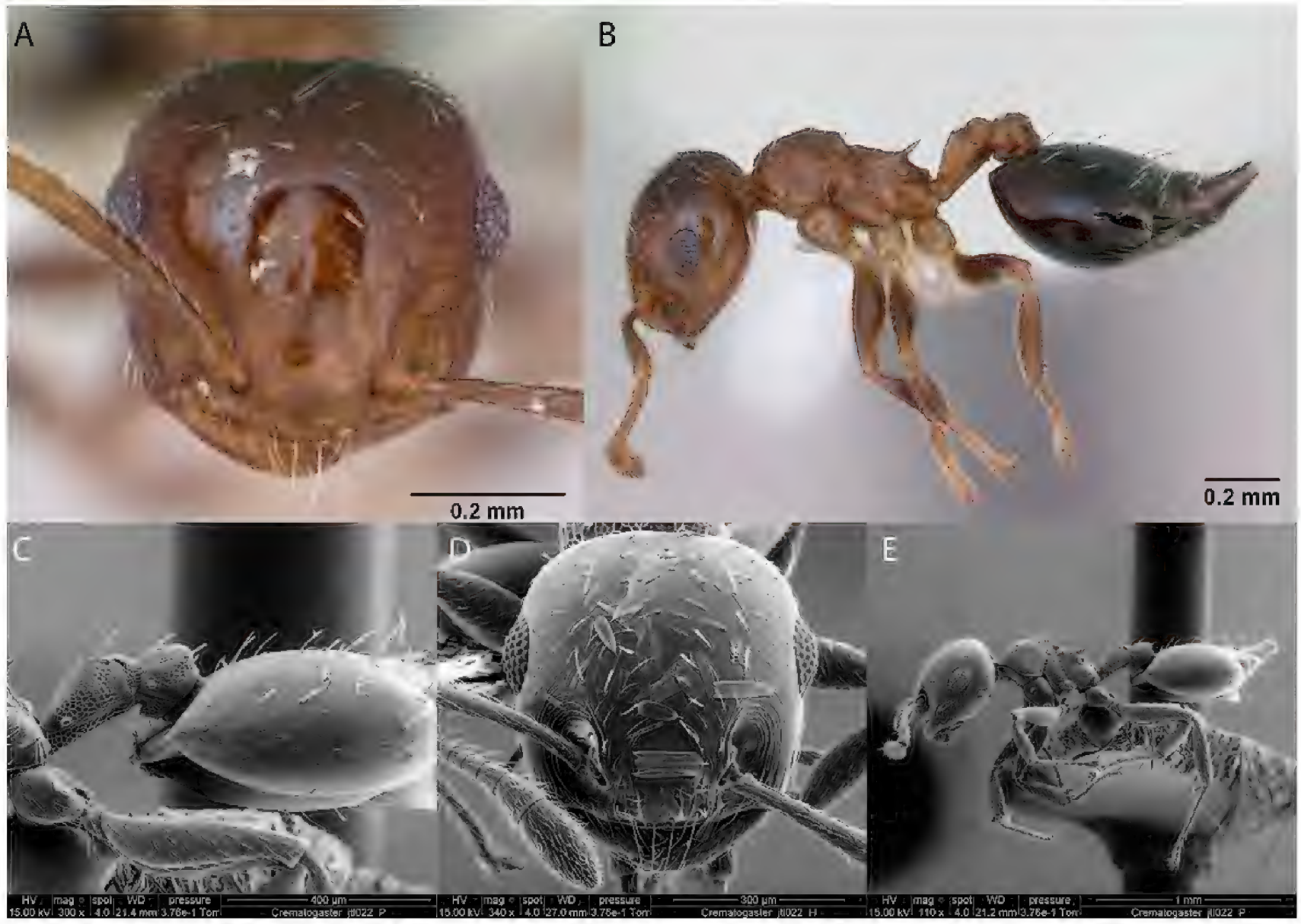

Figure 17. *Crematogaster* JTL-022 worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** petiole and postpetiole in profile **D** head in full-face view **E** view in profile.

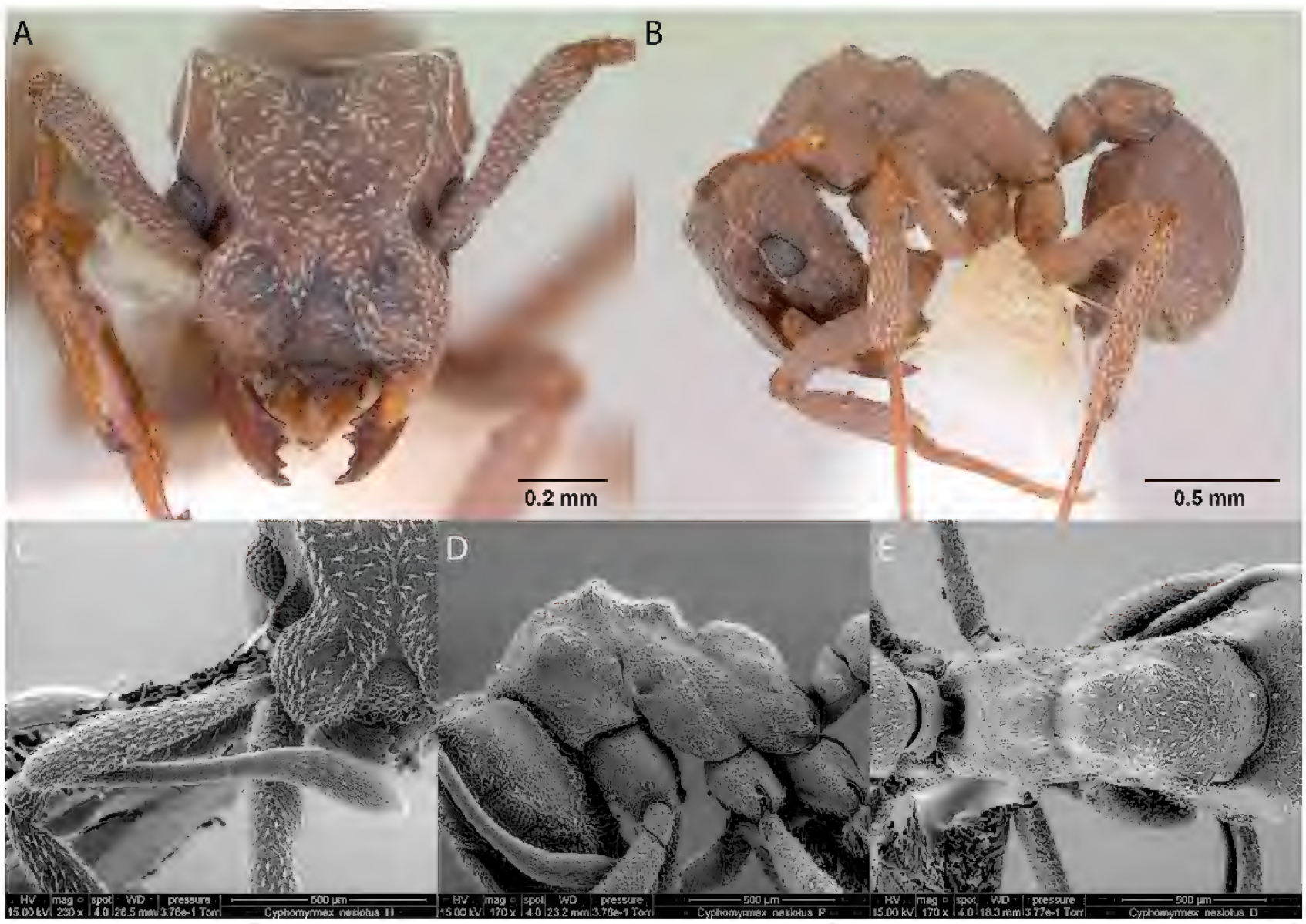

Figure 18. *Cyphomyrmex nesiotus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** antennae in front view **D** mesosoma in profile **E** mesosoma in dorsal view.

and Herrera et al. (2020) [ICCDRS]. Probably *C. rimosus* in Lubin (1984) and Brandão and Paiva (1994).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Nearctic and Neotropical.

Galápagos distribution. Introduced: Gardner (next to Floreana), Isabela (SN), San Cristóbal, Santa Cruz (Herrera et al. 2020).

Cyphomyrmex sp. hh04

Fig. 20

Remarks. First published record as dark form of *C. rimosus* in Herrera and Longino (2008). Cited as *Cyphomyrmex* sp. hh04 in Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, RBINS].

Distribution. Origin uncertain: Isabela (SN) Pinzón, Santa Cruz (Herrera et al. 2020).

New record. Santiago Island.

Genus *Monomorium* Mayr, 1855

Monomorium floricola (Jerdon, 1851)

Fig. 21

Remarks. Originally cited as *Atta floricola* in (Jerdon, 1851). Cited as *Monomorium floreanun* in Stitz (1932). *Monomorium floricola* in Linsley and Usinger (1966). *Monomorium floreanun* in Kempf (1972). *Monomorium floricola* in Kempf (1972), Clark et al. (1982), Lubin (1984) [ICCDRS], McMullen (1993), Meier (1994) [ICCDRS], Abedrabbo (1994) [ICCDRS], de la Vega (1994), Peck (1994a), Peck et al. (1998), Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], von Aesch and Cherix (2005), Boada (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Causton et al. (2006), Herrera and Causton (2010) [ICCDRS], McMullen (2012), Chamorro et al. (2012) [ICCDRS], Dekoninck et al. (2014) [ICCDRS], Wauters et al. (2016) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Bainbridge #5, Baltra, Bartolomé, Bayas, Bowditch South, Champion, Cousin, Daphne Mayor, Española, Fernandina, Floreana, Gardner (next to Floreana), Genovesa, Isabela (CA, SN, VA, VD), Mariela Grande, Mariela Mediana, Marchena, Pinta, Plaza Norte, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé (Herrera et al. 2020).

New record. Sombrero Chino.

Monomorium pharaonis (Linnaeus, 1758)

Fig. 22

Remarks. Originally cited as *Formica pharaonis* in (Linnaeus, 1758). Galápagos first published record in Wheeler (1919). Cited also in Linsley and Usinger (1966),

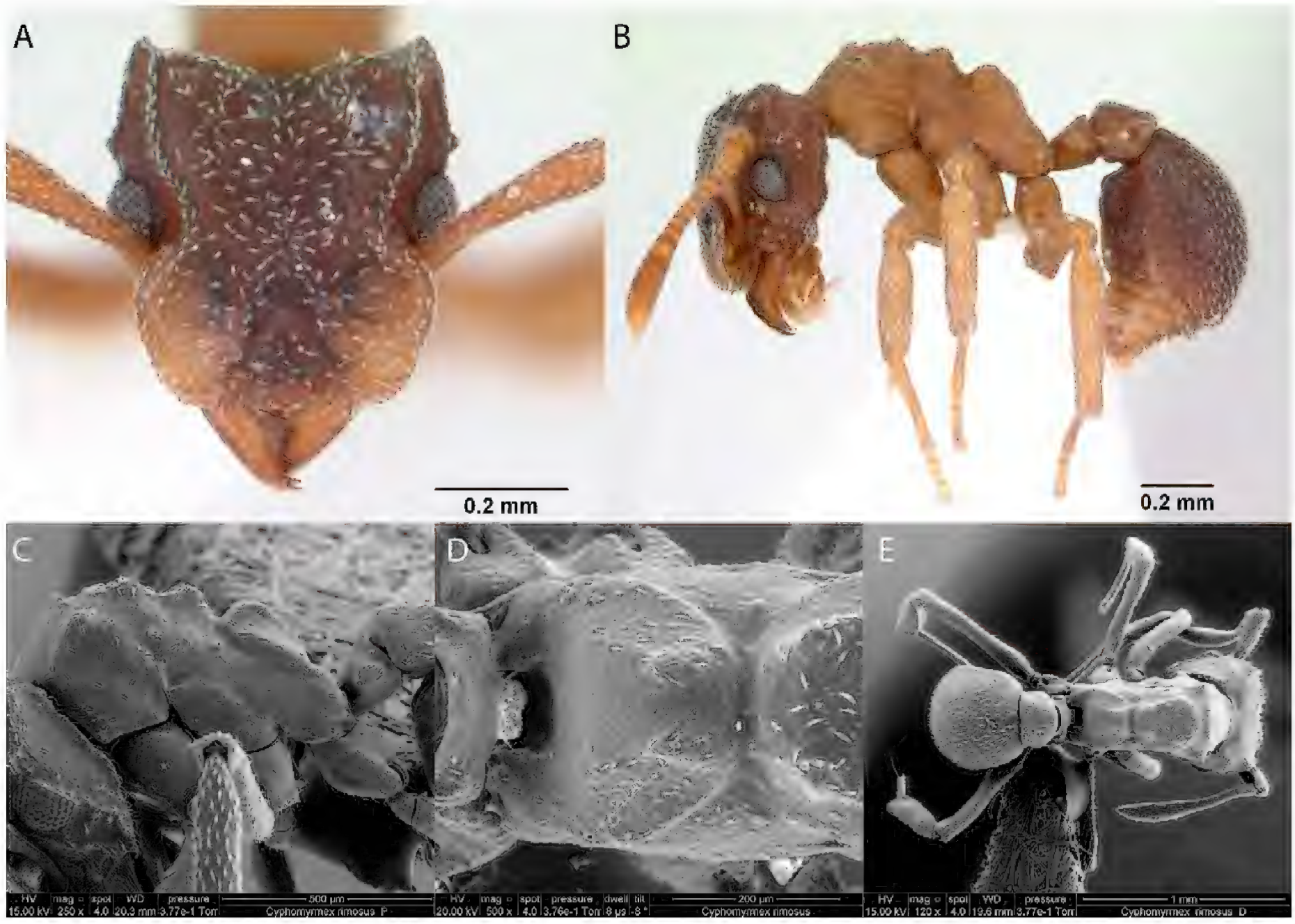

Figure 19. *Cyphomyrmex rimosus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head and mesosoma in profile **D** propodeum in dorsal view **E** dorsal view.

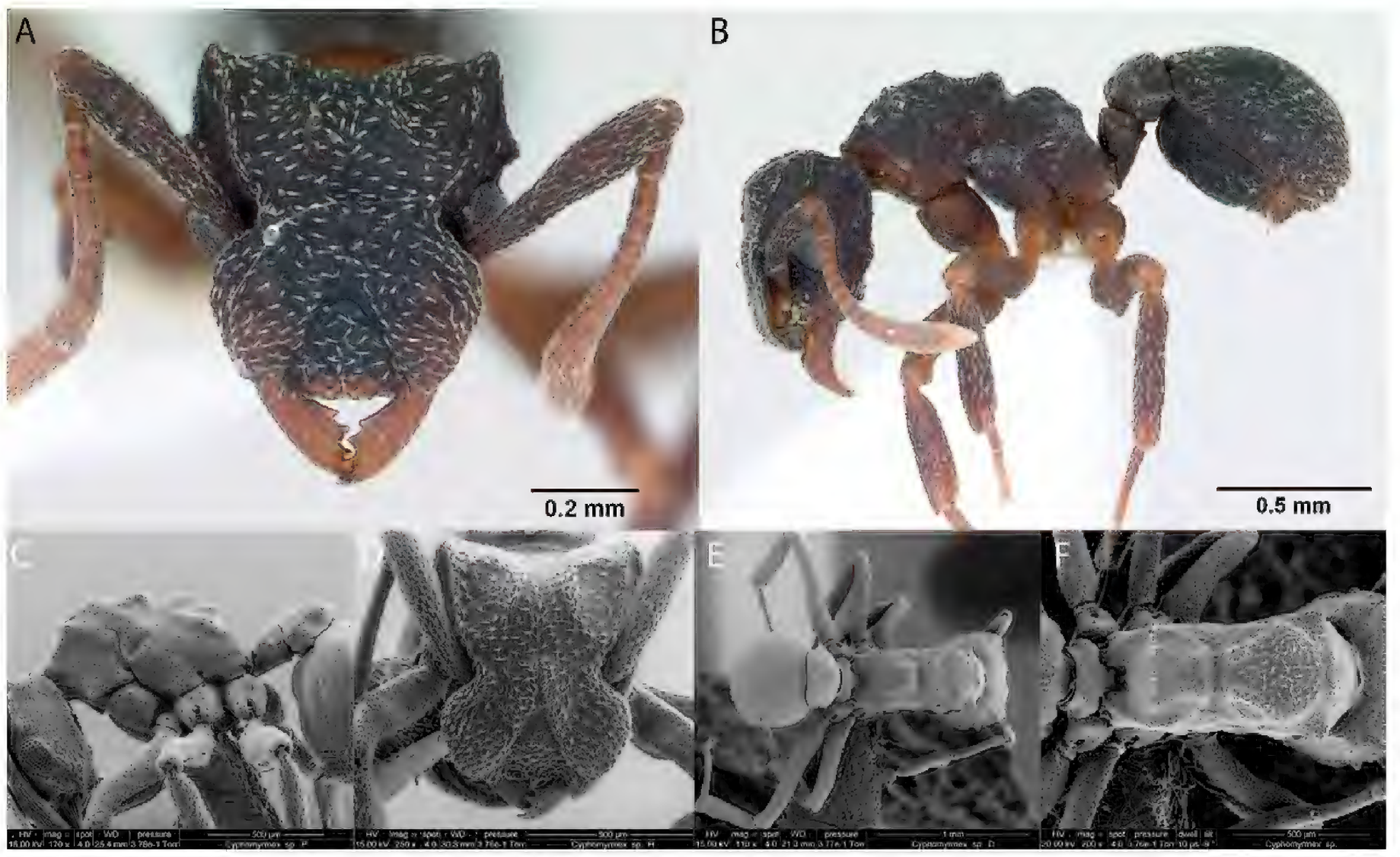

Figure 20. *Cyphomyrmex* sp. hh004 worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in full-face view **E** dorsal view **F** mesosoma in dorsal view.

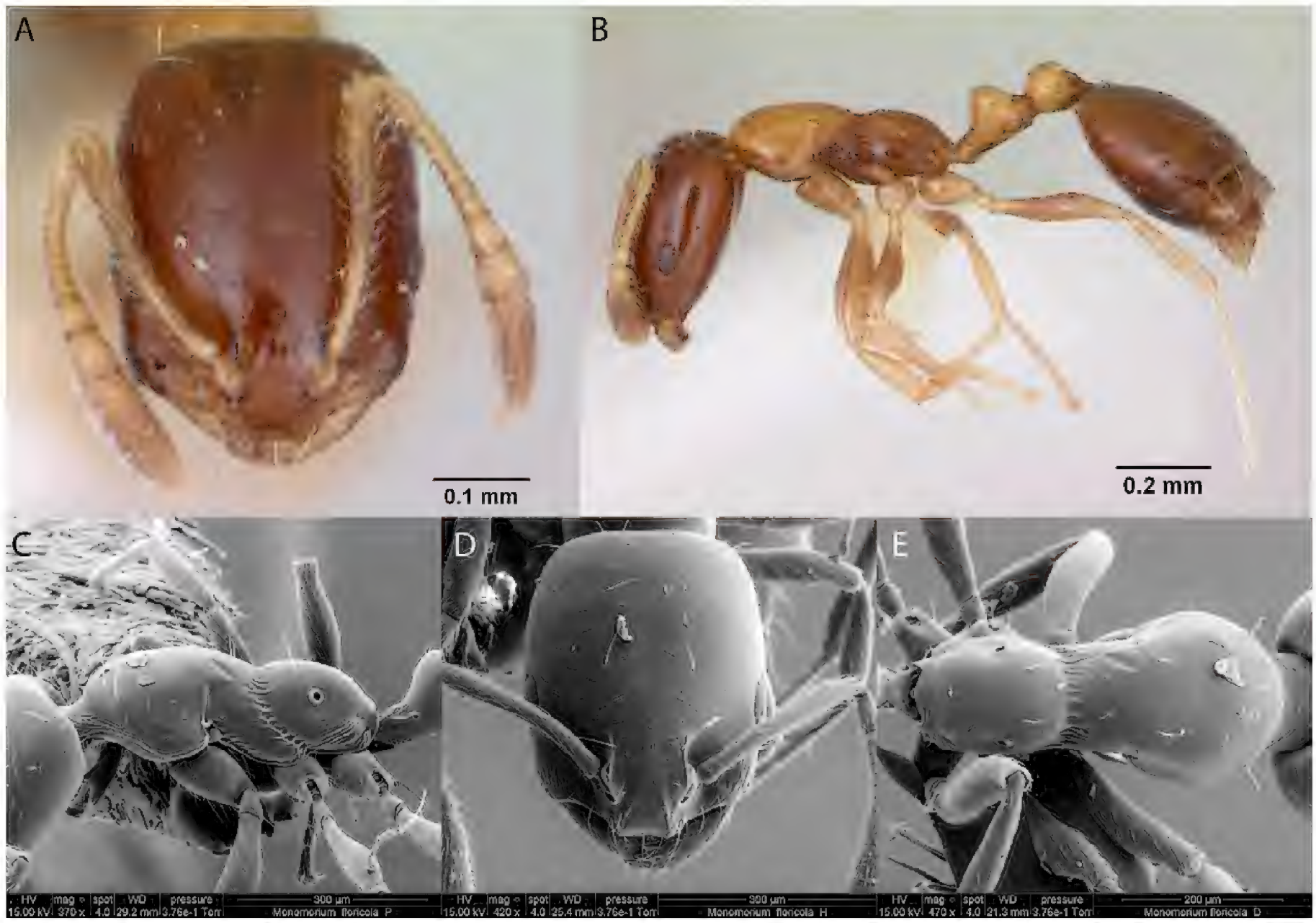

Figure 21. *Monomorium floricola* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in full-face view **E** mesosoma in dorsal view.

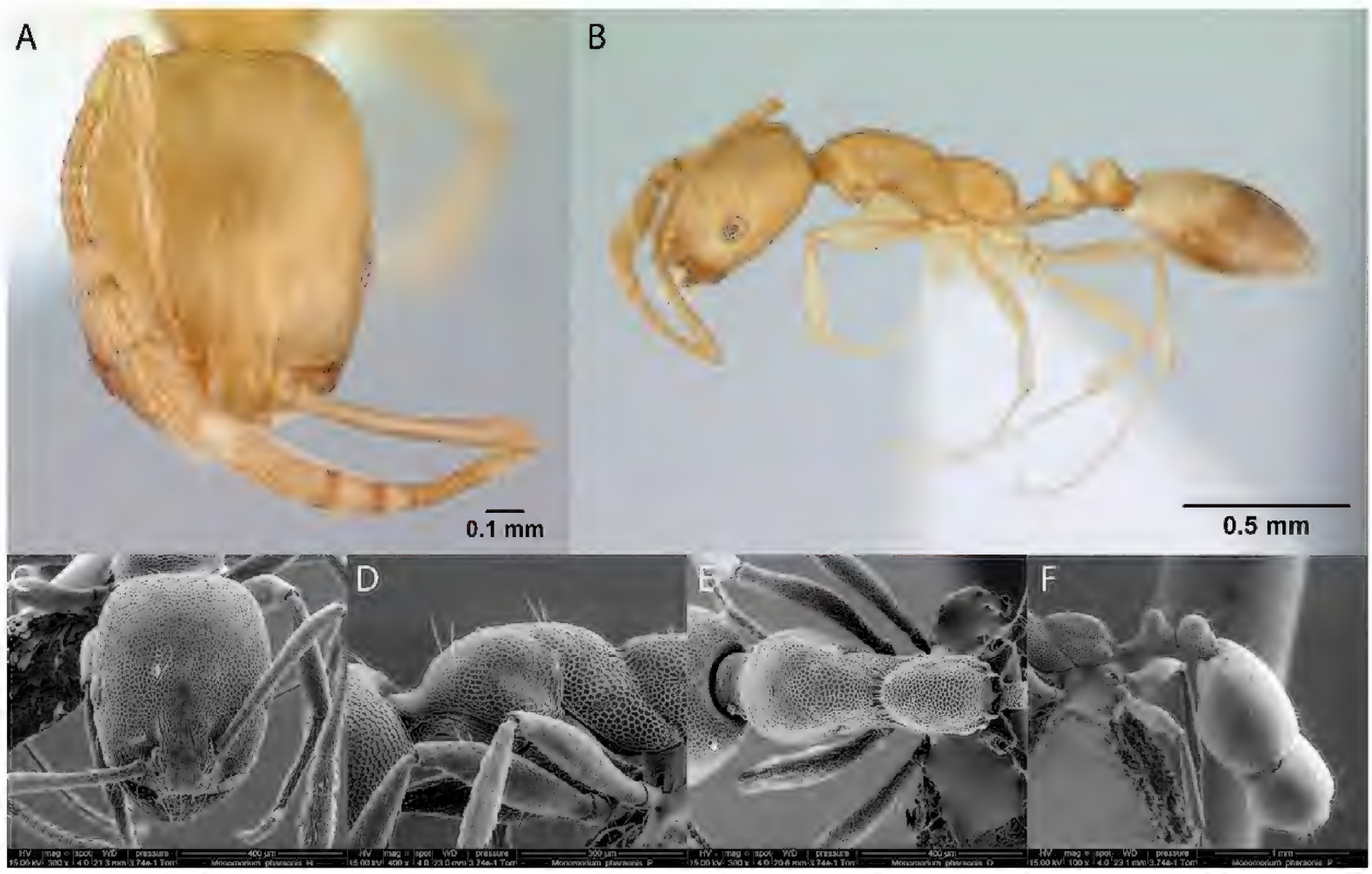

Figure 22. *Monomorium pharaonis* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in profile **E** mesosoma in dorsal view **F** petiole and postpetiole in profile.

Kempf (1972), Lubin (1984) [ICCDRS], Brandão and Paiva (1994), Peck et al. (1998), Causton et al. (2006), Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Baltra, Isabela (SN), Pinta, Santa Cruz (Herrera et al. 2020).

Monomorium cf. *pharaonis*

Fig. 23

Remarks. First record in Herrera and Causton (2010) [ICCDRS]. Cited also in Dekoninck et al. (2014) [ICCDRS], Wauters et al. (2016) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Distribution. Undetermined origin: Baltra, Fernandina, Floreana, Isabela (SN), Marchena, Pinta, San Cristóbal, Santa Cruz, Santa Fé (Herrera et al. 2020).

Genus *Pheidole* Westwood, 1839

Pheidole flavens Roger, 1863

Fig. 24

Remarks. Cited in Wheeler (1919), Clark et al. (1982), Herrera et al. (2014) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

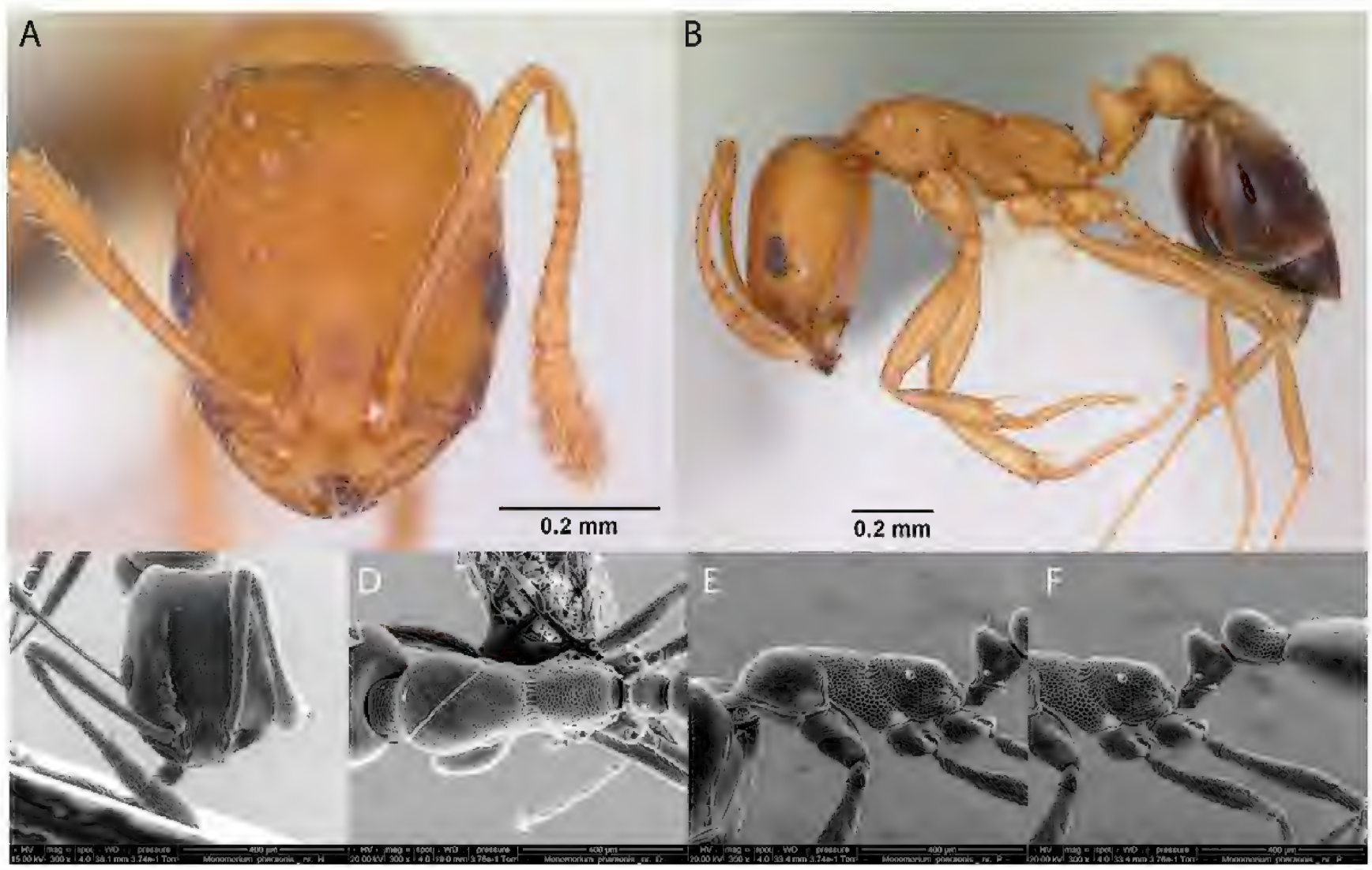

Figure 23. *Monomorium* sp. nr. *pharaonis* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in dorsal view **E** mesosoma in profile **F** petiole and postpetiole in profile.

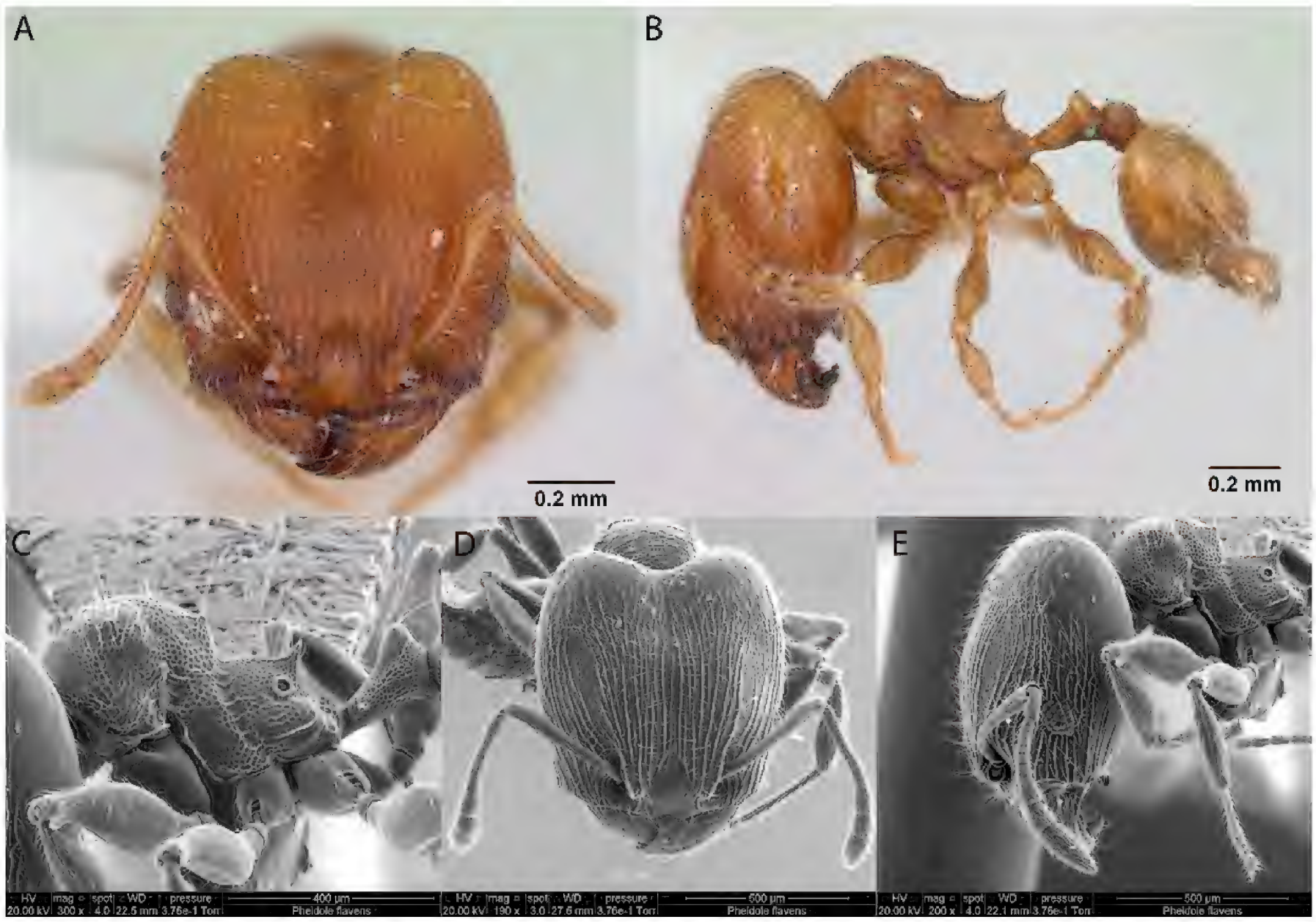

Figure 24. *Pheidole flavens* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in full-face view **E** head in profile.

Distribution. Neotropical.

Galápagos distribution. Introduced: Isabela (CA, SN, VA, VD, VW), San Cristóbal, Santa Cruz (Herrera et al. 2020).

Pheidole megacephala (Fabricius, 1793)

Fig. 25

Remarks. Originally cited as *Formica megacephala* (Fabricius, 1793). Cited in Herrera et al. (2013) [ICCDRS], Wauters et al. (2016) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Isabela (SN), San Cristóbal, Santa Cruz (Herrera et al. 2013).

Pheidole williamsi Wheeler, 1919

Fig. 26

Remarks. Cited as *Pheidole williamsi* in (Wheeler 1919). *Pheidole williamsi* var. *seymourensis* in Wheeler (1924), Linsley and Usinger (1966). *Pheidole williamsi williamsi* in Linsley and Usinger (1966). *Pheidole williamsi* in Clark et al. (1982),

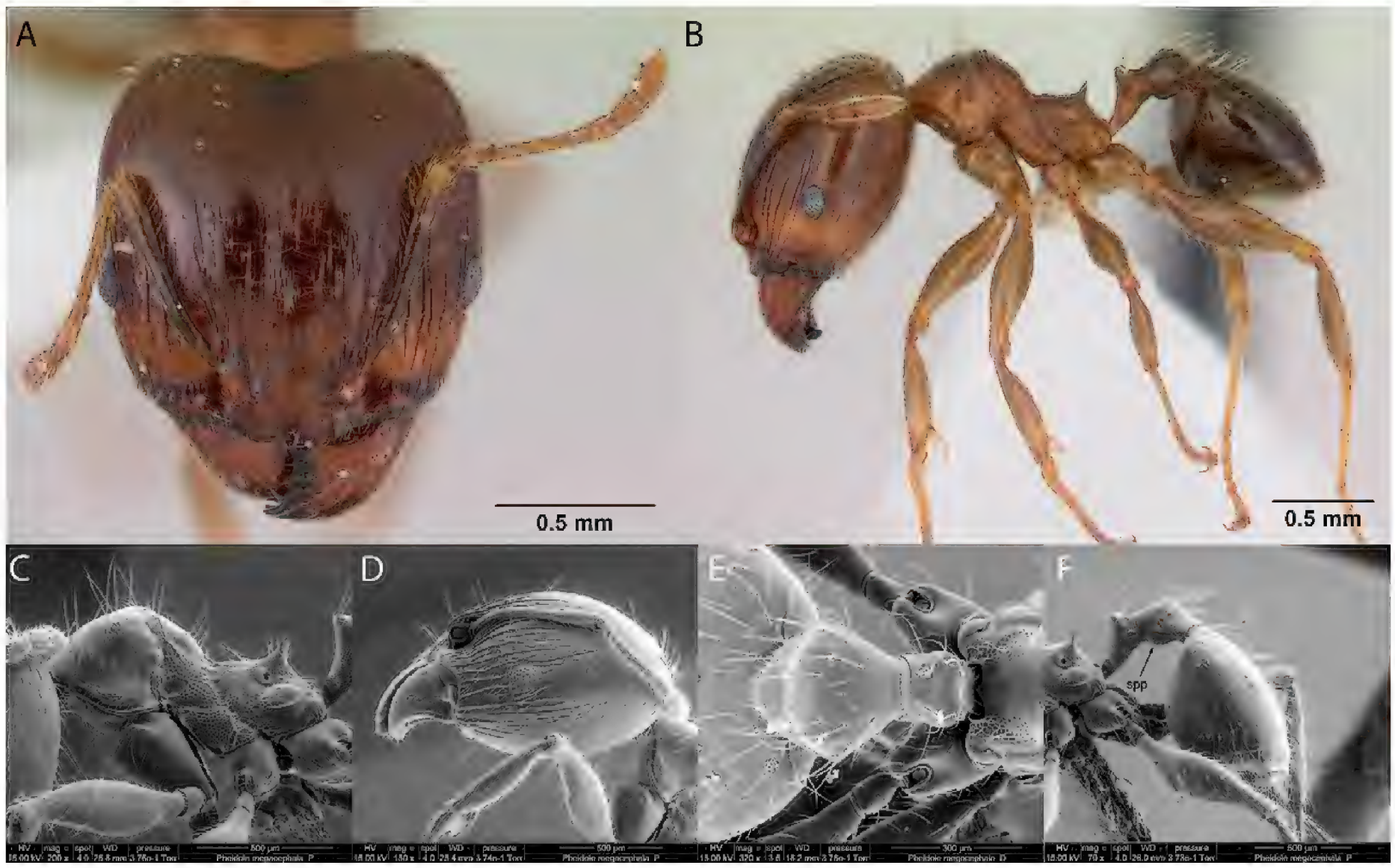

Figure 25. *Pheidole megacephala* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in profile **E** petiole and postpetiole in dorsal view **F** petiole and postpetiole in profile (spp = subpetiolar process).

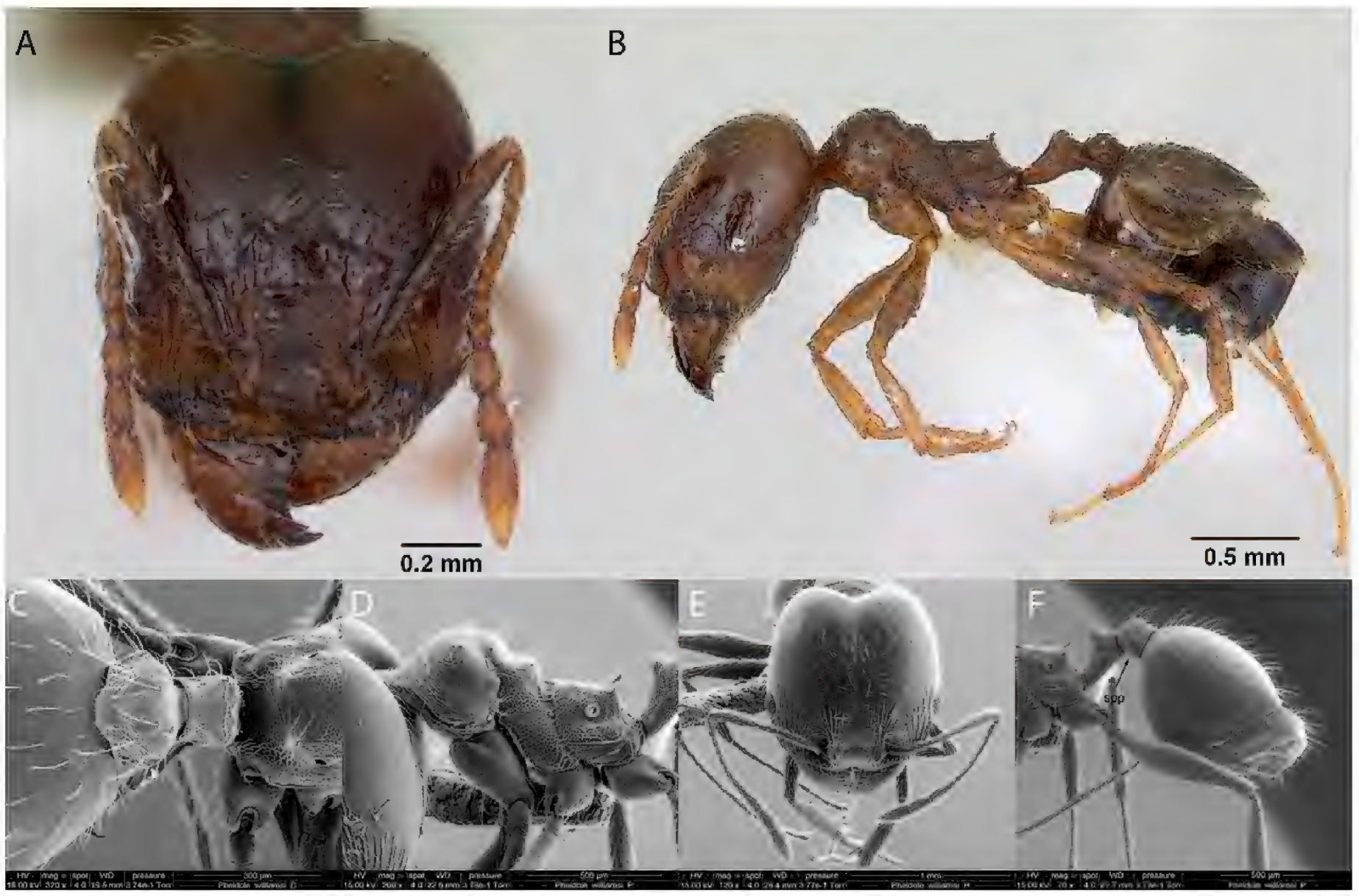

Figure 26. *Pheidole williamsi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** petiole and postpetiole in profile **D** mesosoma in profile **E** head in profile **F** petiole and postpetiole in profile (spp = subpetiolar process).

Lubin (1984, 1985), Espadaler (1997), Wilson (2003), Herrera et al. (2014) [ICCDRS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Kempf (1972), Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Possibly endemic: Albany, Bainbridge #1, Bainbridge #2, Bainbridge #3, Bainbridge #4, Bainbridge #5, Bainbridge #6, Baltra, Bowditch South, Daphne Mayor, Fernandina, Floreana, Gardner (next to Floreana), Isabela (SN, VA, VD, VW), Mariela Grande, Mariela Mediana, Pinta, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé, Tortuga (Herrera et al. 2020).

New records. Bartolomé and Beagle.

Pheidole sp. hh01

Fig. 27

Remarks. In Herrera et al. (2014), Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Distribution. Origin uncertain: Bowditch South, Eden, Floreana, Isabela (CA, SN, VA, VD, VE, VW), Logie, Pinzón, Santiago, San Cristóbal, Santa Cruz (Herrera et al. 2020).

Genus *Rogeria* Emery, 1894

Rogeria curvipubens Emery, 1894

Fig. 28

Remarks. Galápagos first published record (Herrera and Longino 2008), cited also in Dekoninck et al. (2014), Wauters et al. (2016), Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Neotropical.

Galápagos distribution. Introduced: Isabela (SN), San Cristóbal, Santa Cruz (Herrera et al. 2020).

Genus *Solenopsis* Westwood, 1840

Solenopsis geminata (Fabricius, 1804)

Fig. 29

Remarks. Originally cited as *Atta geminata* in (Fabricius, 1804). Cited as *Solenopsis geminata* in Emery (1893). *Solenopsis geminata galapageia* in Wheeler (1919), Linsley and Usinger (1966), and Kempf (1972). *Solenopsis geminata* in Lubin (1984), Williams (1987), Trager (1991), Williams and Whelan (1991), Brandão and Paiva (1994), Meier (1994), de la Vega (1994), Peck et al. (1998), Pezzatti et al. (1998), von Aesch and Cherix (2005) [ICCDRS], Boada (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Causton et al. (2006), Pacheco et al. (2007), Herrera and Causton (2010) [ICCDRS], Herrera and Longino (2008), Herrera and Causton (2010) [ICCDRS], Herrera et al. (2013), Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2014) [RBINS], Wauters et al. (2016), [RBINS] Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

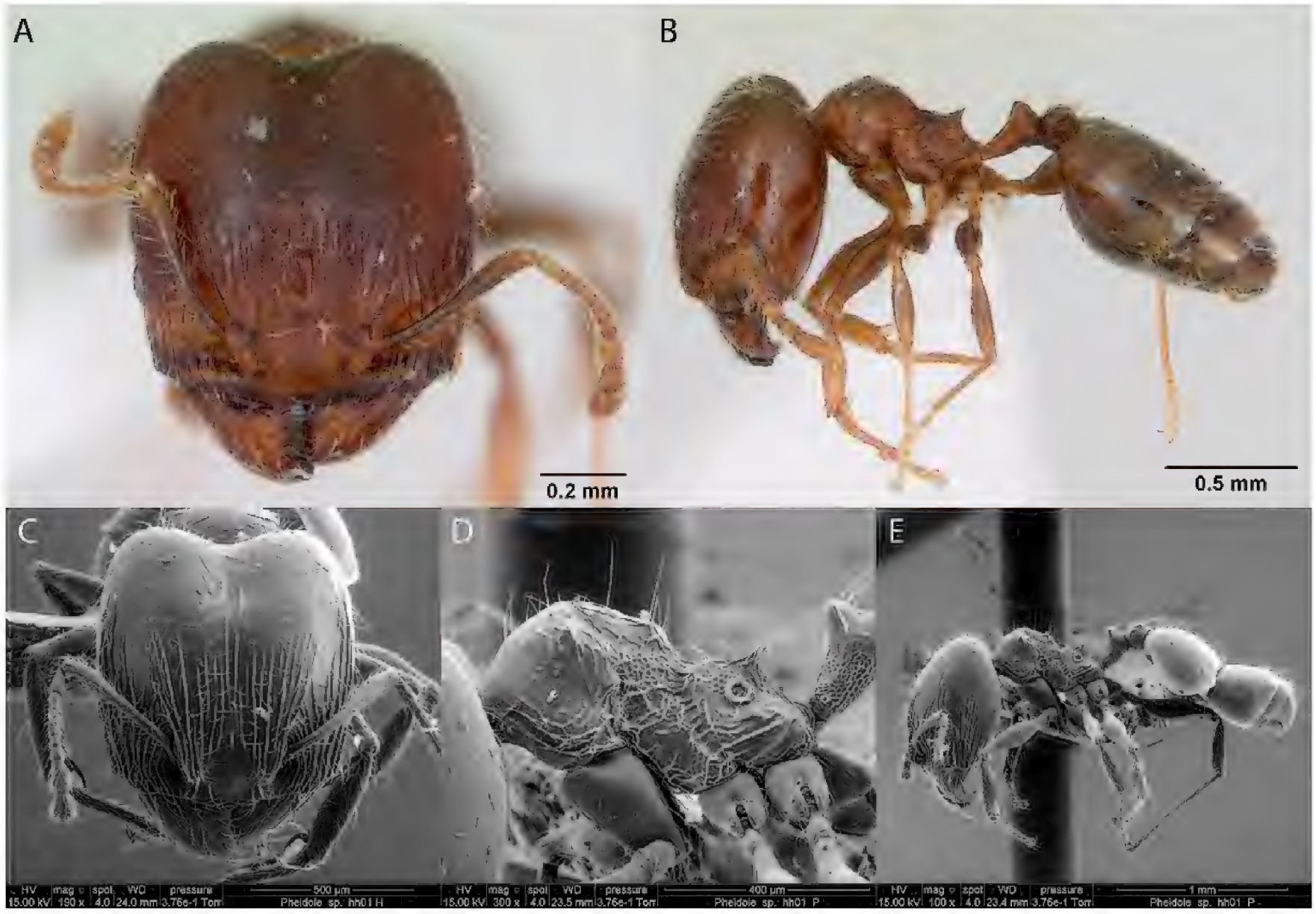

Figure 27. *Pheidole* sp. hh01 worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in profile **E** view in profile.

Figure 28. *Rogeria curvipubens* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** head in profile **E** mesosoma in dorsal view.

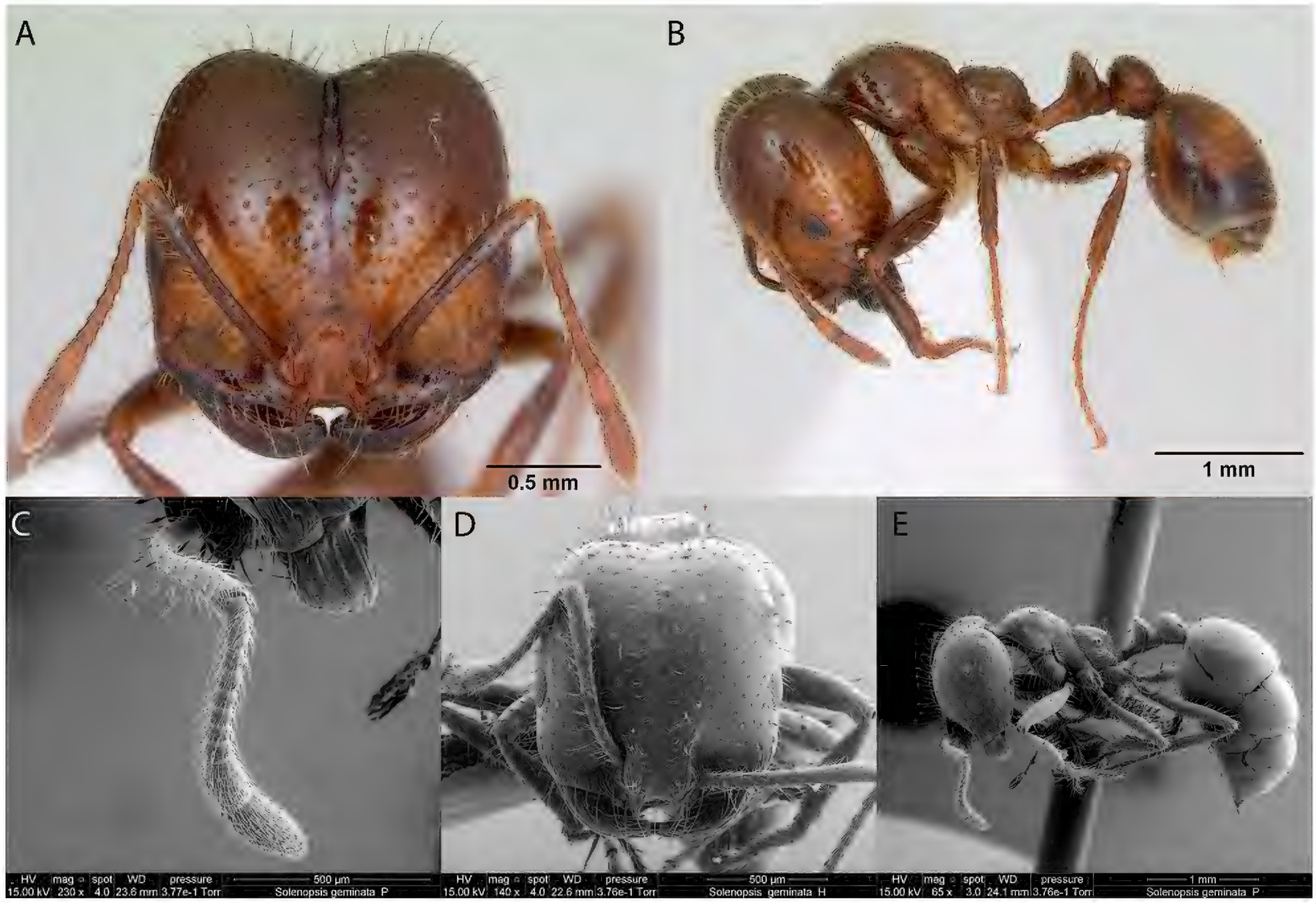

Figure 29. *Solenopsis geminata* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** antennae funiculi in profile **D** head in full-face view **E** view in profile.

Taxonomic history. Trager (1991), Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Albany, Bainbridge #1, Baltra, Bayas, Champion, Cuevas, Eden, Enderby, Fernandina, Floreana, Gardner (next to Floreana), Isabela (CA, SN, VA), Mariela Grande, Mao, Mariela Mediana, Plaza Sur, Santa Fé, Santiago, San Cristóbal, Santa Cruz, Seymour Norte (Herrera et al. 2020).

Solenopsis globularia (Smith, 1858)

Fig. 30

Remarks. Originally cited as *Myrmica globularia pacifica* in (Smith, 1858). Cited as *Solenopsis globularia pacifica* in Wheeler (1919, 1924). *Solenopsis globularia pacifica* var. *rubida* in Wheeler (1919, 1924), *Solenopsis globularia pacifica* in Linsley and Usinger (1966). *Solenopsis globularia rubida* in Linsley and Usinger (1966). *Solenopsis globularia pacifica* and *Solenopsis globularia pacifica* var. *rubida* in Kempf (1972). *Solenopsis globularia* in Clark et al. (1982). *Solenopsis pacifica* in Lubin (1984). *Solenopsis globularia* in Lubin (1985) [ICCDRS], Meier (1994), Abedrabbo (1994) [ICCDRS], Peck et al. (1998), (Pezzatti et al. (1998), Roque-Albelo et al. (2000) [ICCDRS], von Aesch and Cherix (2005), von Aesch (2006), Causton et al. (2006), Pacheco et al. (2007), Herrera and Causton (2010)

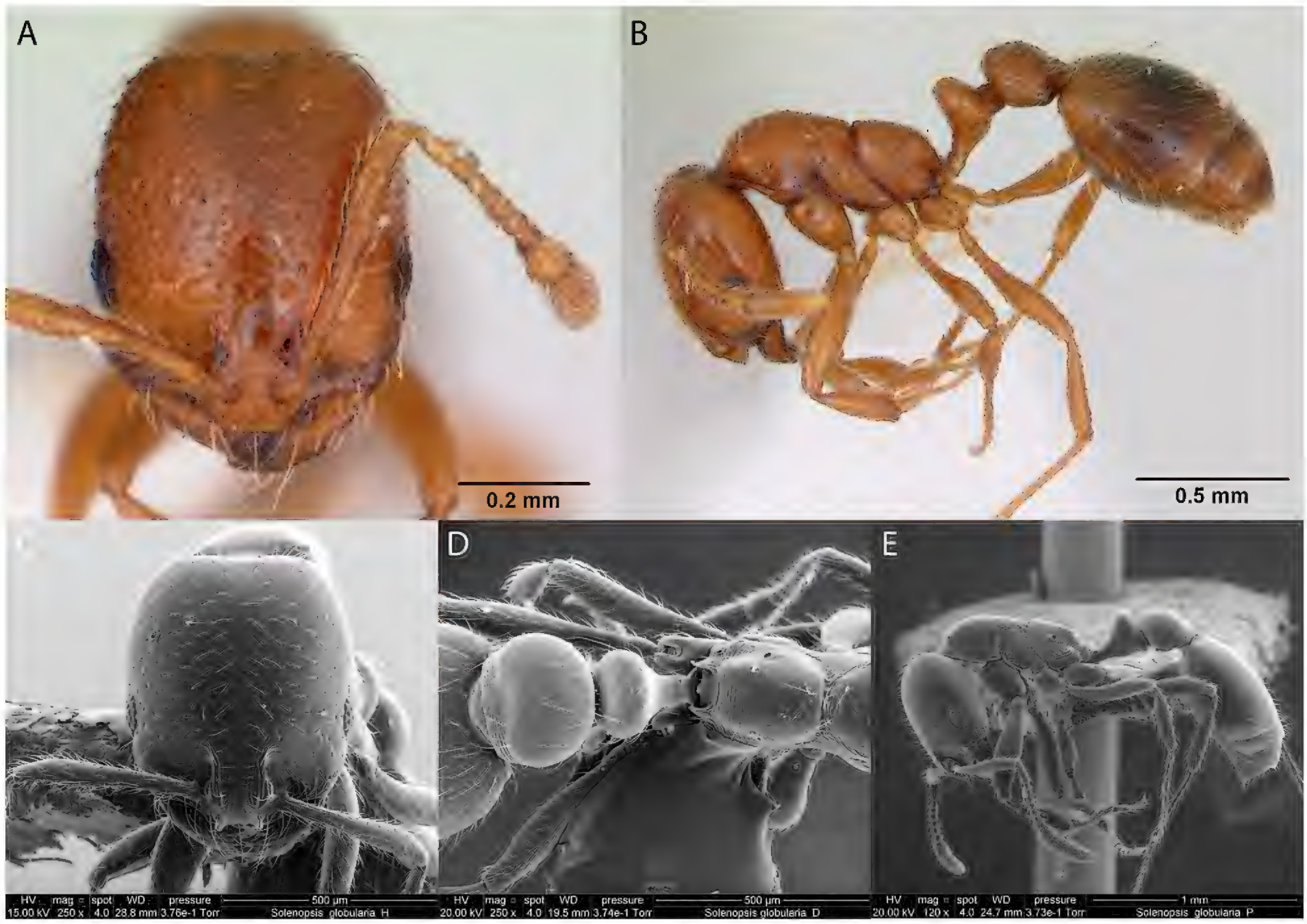
A
0.2 mm
B
0.5 mm
D
E
HV mag spot WD pressure 500 µm
15.00 kV 250 x 4.0 28.8 mm 3.76e-1 Torr Solenopsis globularia H
HV mag spot WD pressure 500 µm
20.00 kV 250 x 4.0 19.5 mm 3.74e-1 Torr Solenopsis globularia D
HV mag spot WD pressure 1 mm
20.00 kV 120 x 4.0 24.7 mm 3.73e-1 Torr Solenopsis globularia P

Figure 30. *Solenopsis globularia* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** petiole and postpetiole in dorsal view **E** head and mesosoma in profile.

[ICCDRS], McMullen (2012), Pacheco and Mackay (2013), Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006), Pacheco and Mackay (2013).

Distribution. Afrotropical, Nearctic, Neotropical.

Galápagos distribution. Introduced: Albany, Bainbridge #1, Bainbridge #3, Bainbridge #5, Bainbridge #7, Bainbridge #8, Baltra, Bowditch South, Champion, Daphne Mayor, Darwin, Eden, Enderby, Española, Fernandina, Floreana, Gardner (next to Española), Gardner (next to Floreana), Genovesa, Isabela (CA, SN, VA, VD, VE, VW), Mariela Grande, Mao, Mariela Pequeña, Marchena, Pinta, Pinzón, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé, Tortuga (Herrera et al. 2020).

New record. Sombrero Chino.

Solenopsis gnoma Pacheco, Herrera & Mackay, 2007

Fig. 31

Remarks. Cited also in Dekoninck et al. (2014), Wauters et al. (2016), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Pacheco and Mackay (2013), Bolton (2014).

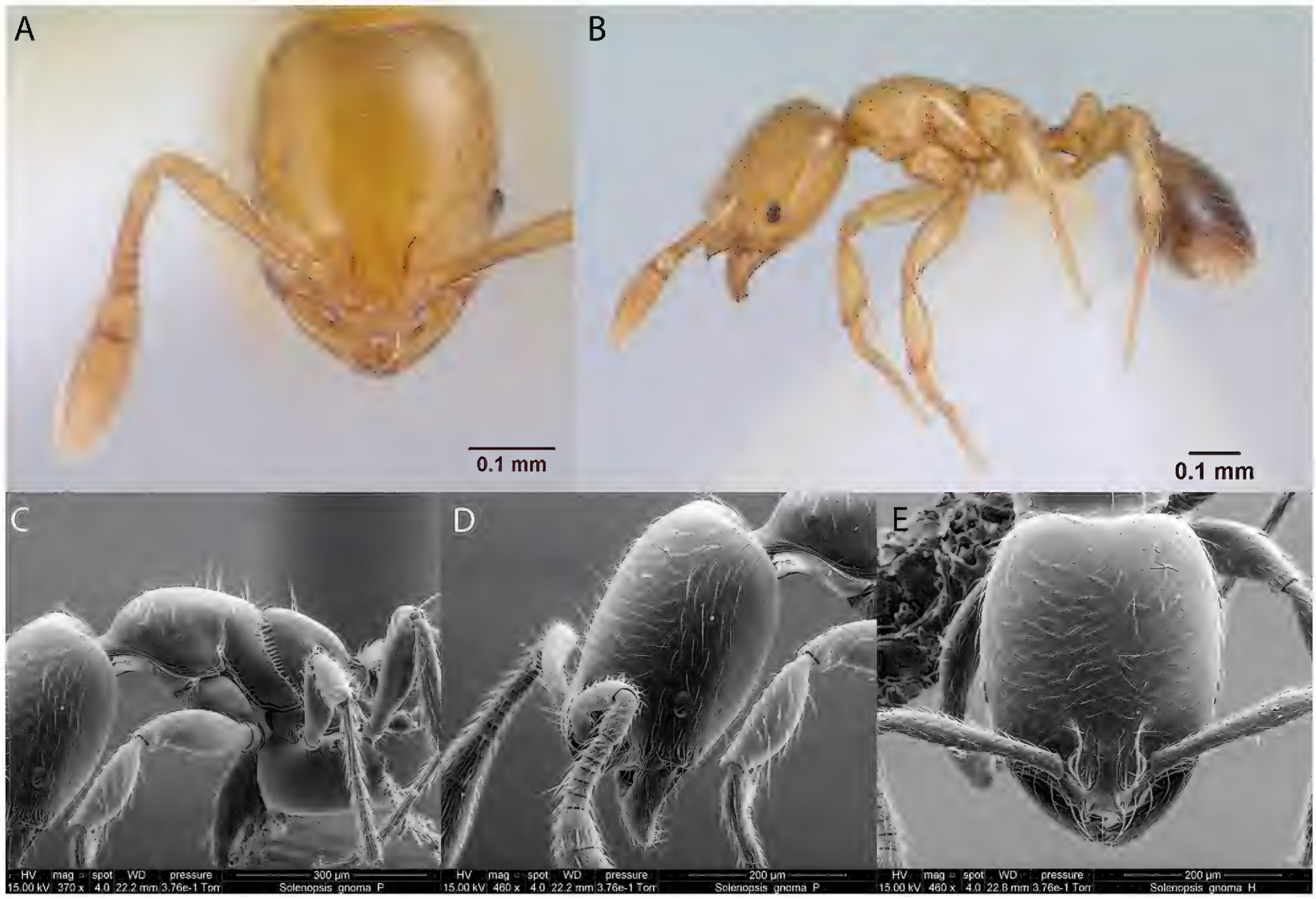

Figure 31. *Solenopsis gnoma* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in profile **E** head in full-face view.

Distribution. Probably endemic: Albany, Bowditch South, Española, Floreana, Isabela (SN, VA, CA), Marchena, San Cristóbal, Santa Cruz (Pacheco et al. 2007; Herrera et al. 2020).

New record. Santiago.

Solenopsis saevissima (Smith, 1855)

Remarks. Originally cited as *Myrmica saevissima* (Smith, 1855). Doubtful record for Galápagos (Herrera et al. 2020). Cited in Wheeler (1919, 1924), Linsley and Usinger (1966) and Brandão and Paiva (1994), probably misidentification in Peck et al. (1998). Cited also from literature in Causton et al. (2006).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Nearctic, Neotropical.

Galápagos distribution. Uncertain: Santa Cruz Island (Wheeler 1919; Peck et al. 1998).

Solenopsis cf. *basalis* (hh06)

Fig. 32

Remarks. First record in Herrera et al. (2014), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

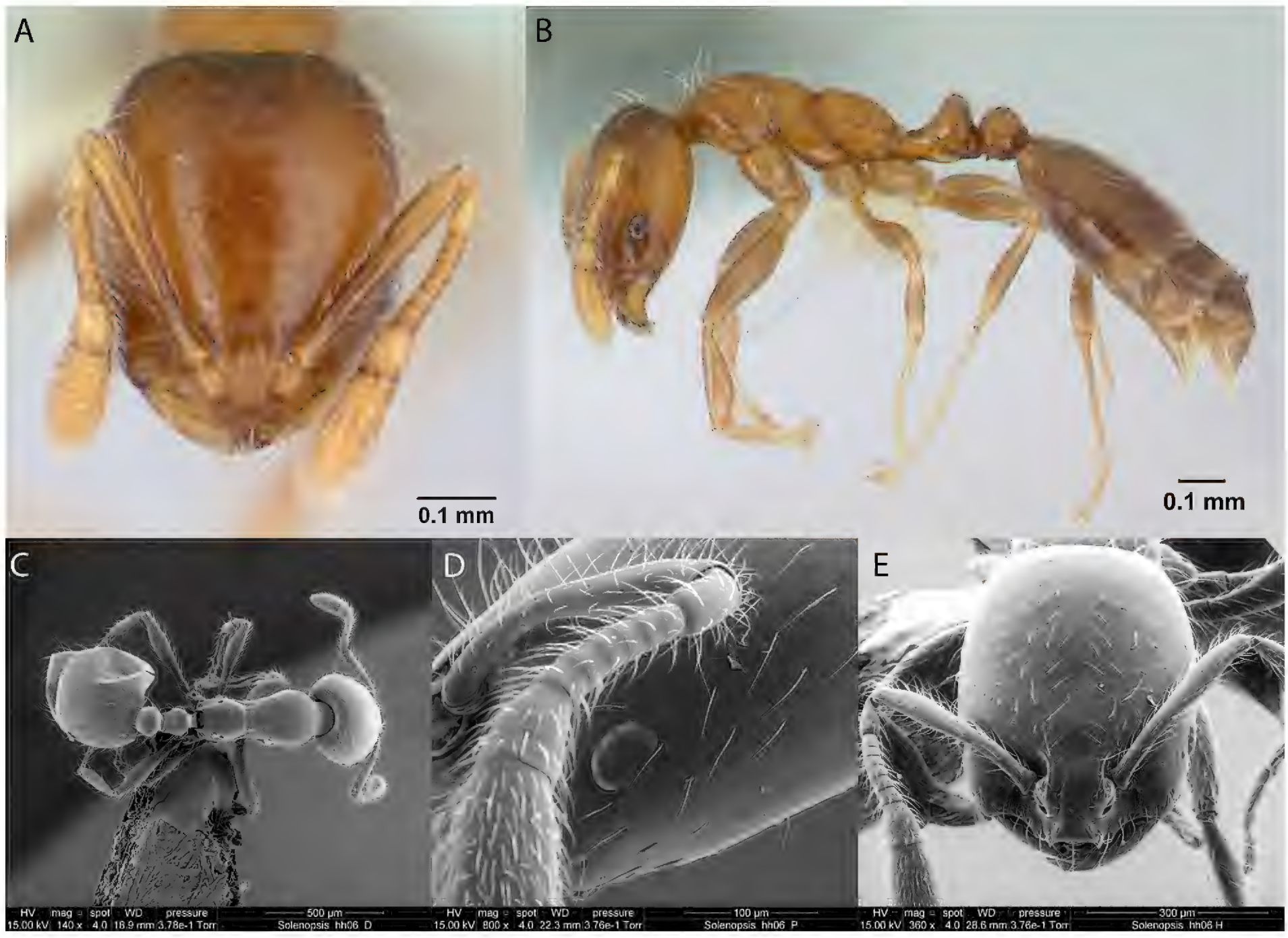

Figure 32. *Solenopsis* sp. basalis (hh06) worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in profile **E** head in full-face view.

Distribution. Origin uncertain: Bainbridge #5, Santa Cruz, Santiago (Herrera et al. 2014).

Genus *Strumigenys* Smith, 1860

Strumigenys eggersi Emery, 1890

Fig. 33

Remarks. Galápagos first published record in Herrera et al. (2014). Cited also in Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Indomalaya, Nearctic, Neotropical.

Galápagos distribution. Introduced: Santa Cruz (Herrera et al. 2014).

Strumigenys emmae (Emery, 1890)

Fig. 34

Remarks. Originally cited as *Epitritus emmae* in (Emery, 1890). Cited as *Quadristruma emmae* in Pezzatti et al. (1998) and Causton et al. (2006). Also, in Herrera et al. (2014). Wauters et al. (2016), Herrera et al. 2020) [ICCDRS].

Taxonomic history. Kempf (1972), Bolton (1995, 2014), Bolton et al. (2006).

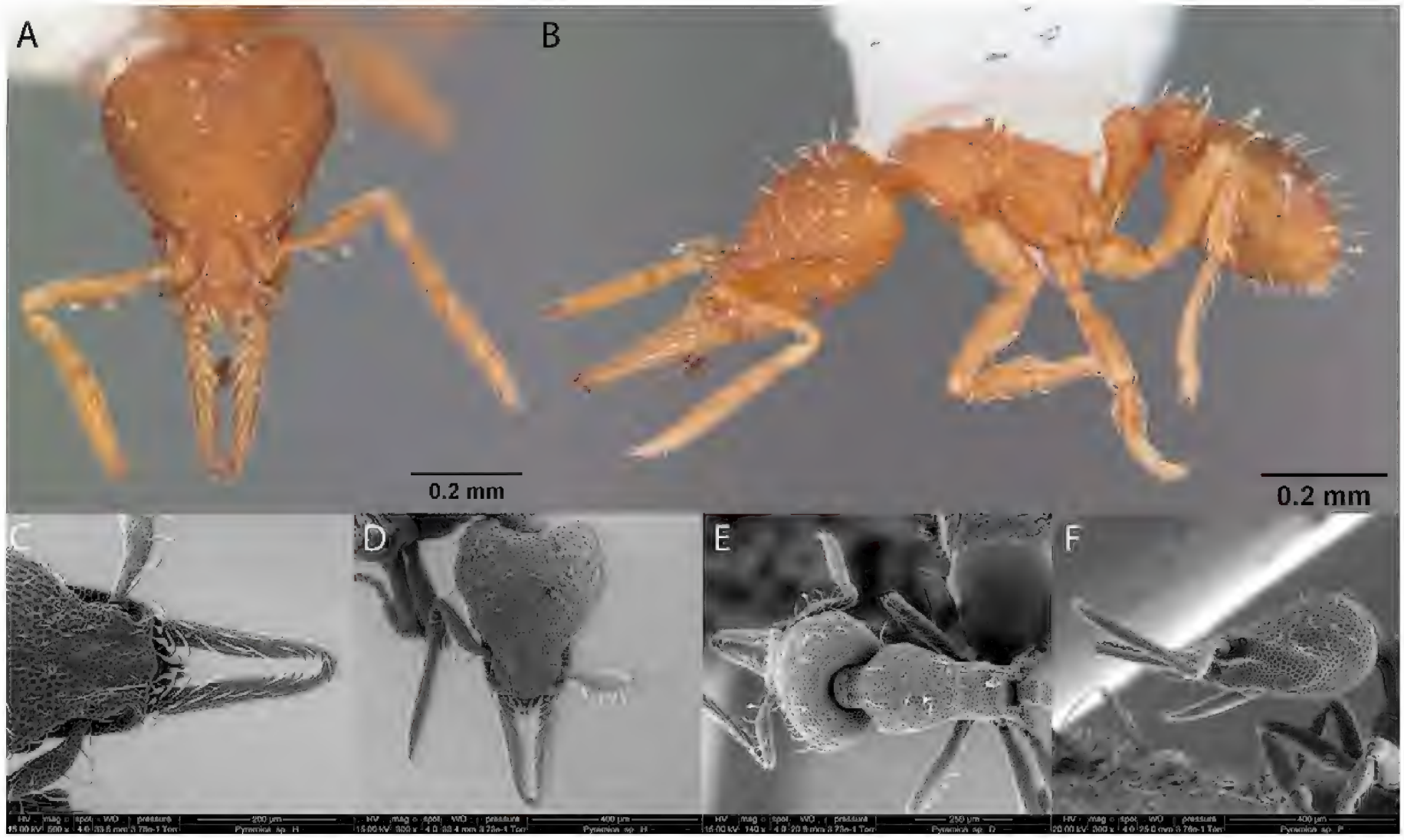

Figure 33. *Strumigenys eggersi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on mandibles **D** head in full-face view **E** mesosoma in dorsal view **F** head in profile.

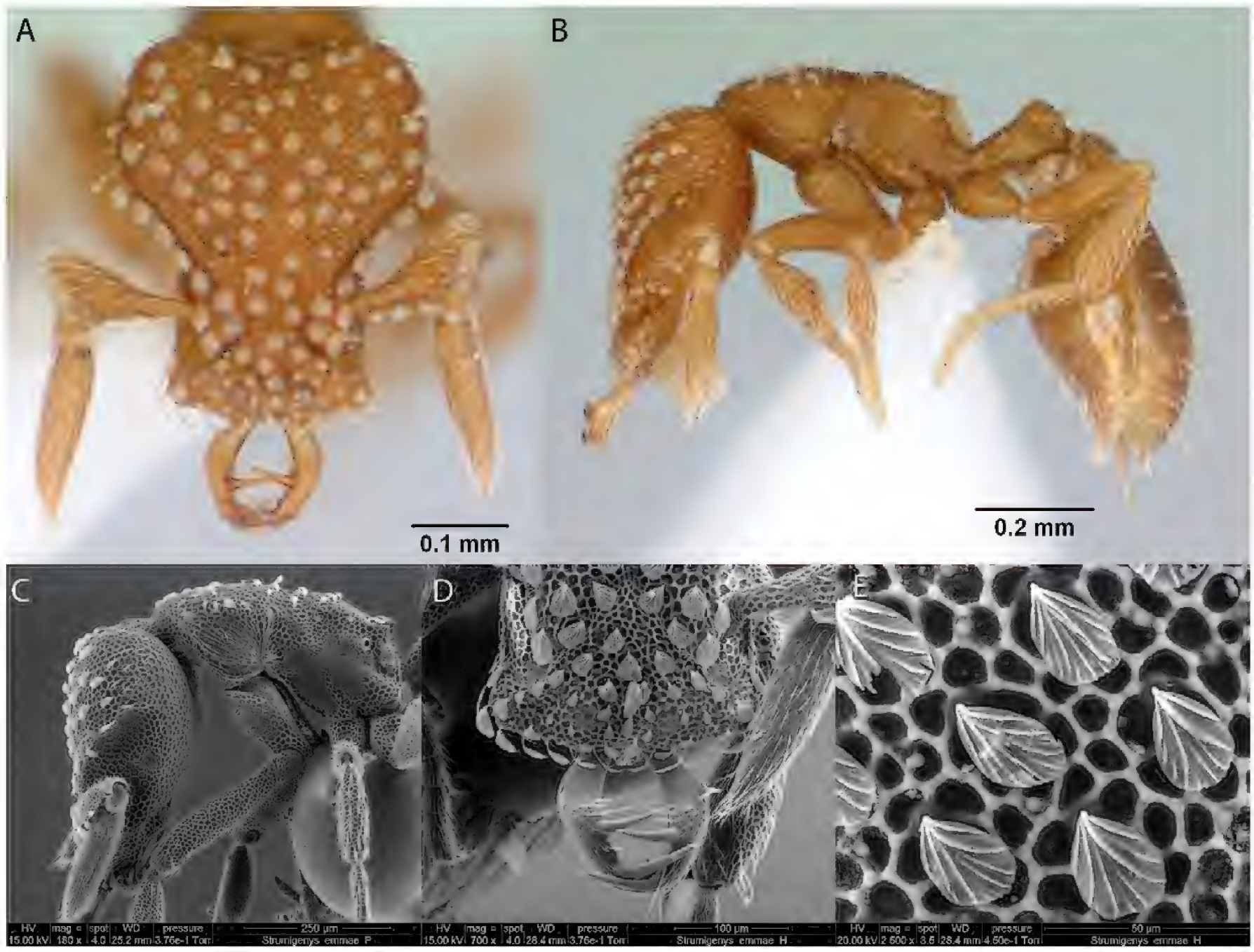

Figure 34. *Strumigenys emmae* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in profile **D** close-up of mandibles **E** close-up of spatulate setae.

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Floreana, Isabela (SN, VA), San Cristóbal, Santa Cruz (Herrera et al. 2020).

Strumigenys louisianae Roger, 1863

Fig 35

Remarks. Cited in Lubin (1984), (Pezzatti et al. (1998), von Aesch (2006) [ICCDRS], Causton et al. (2006), Herrera et al. (2014), Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2016), Herrera et al. (2020), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. In Kempf (1972), Brandão (1991), Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Nearctic, Neotropical.

Galápagos distribution. Introduced: Floreana, Isabela (CA, SN, VA), San Cristóbal, Santa Cruz (Herrera et al. 2020).

New record. Santiago.

Strumigenys membranifera Emery, 1869

Fig. 36

Remarks. Galápagos first published record in Herrera et al. (2014). Cited in Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. In Kempf (1972), Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Isabela (VA, VW), Santiago (Herrera et al. 2020).

Genus *Tetramorium* Mayr, 1855

Tetramorium bicarinatum (Nylander, 1846)

Fig. 37

Remarks. Originally cited as *Myrmica bicarinatum* in (Nylander, 1846). Cited as *Tetramorium guineense* in Emery (1893), Wheeler (1919) [CAS], Wheeler (1924), Wheeler (1933) [CAS], Linsley and Usinger (1966), Kempf (1972), Clark et al. (1982), Brandão and Paiva (1994). As *T. bicarinatum* in Lubin (1984), Lubin (1985) [QCAZ], Abedrabbo (1994) [ICCDRS], de la Vega (1994), Meier (1994) [ICCDRS], Pezzatti et al. (1998) [ICCDRS], von Aesch and Cherix (2005), von Aesch (2006) [ICCDRS], Causton et al. (2006), Herrera and Causton (2010) [ICCDRS], Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2016) [RBINS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Kempf (1972), Brandão (1991), Bolton (1995, 2014), Bolton et al. (2006).

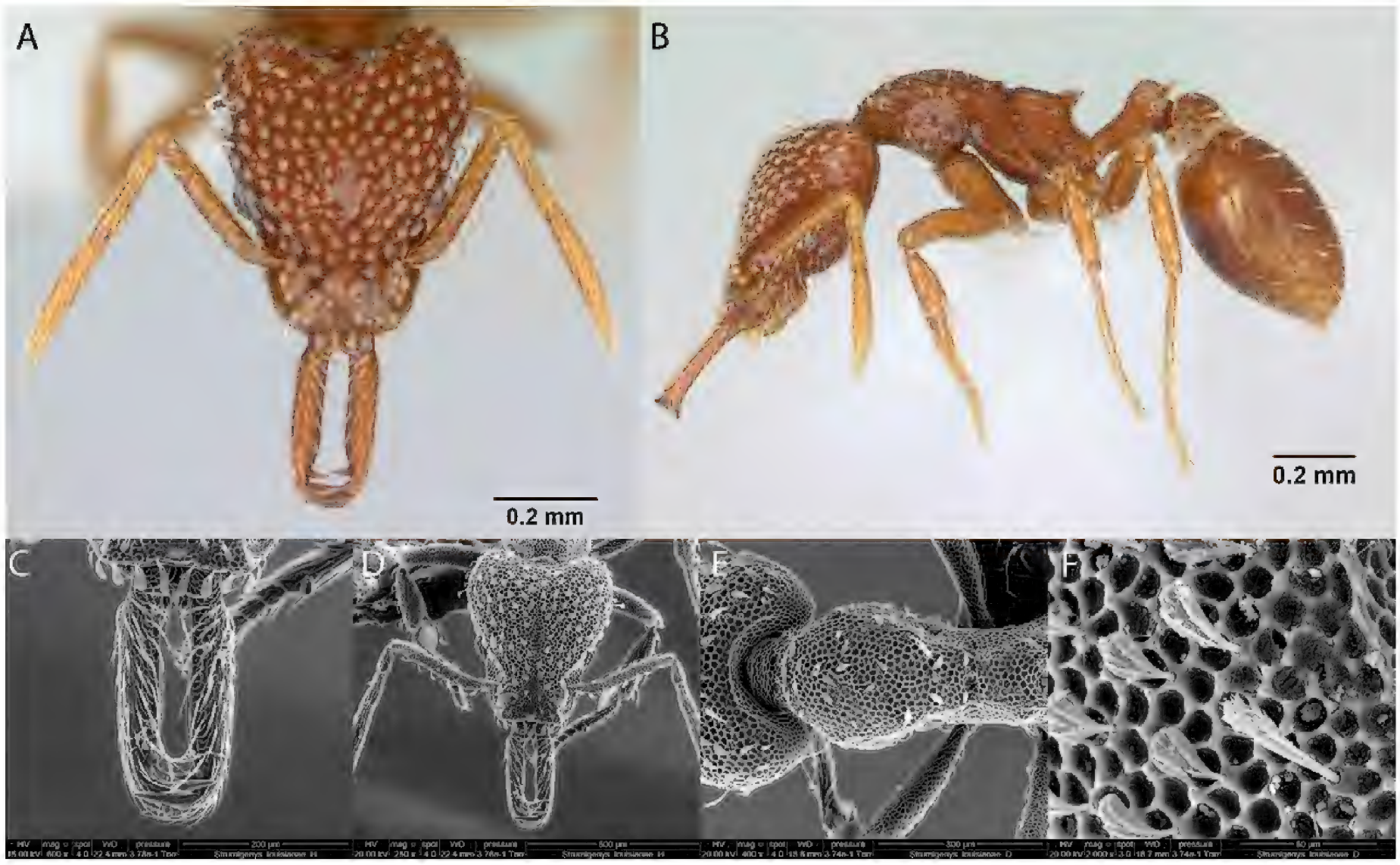

Figure 35. *Strumigenys louisianae* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on mandibles **D** head in full-face view **E** mesosoma in dorsal view **F** close-up on spatulate setae.

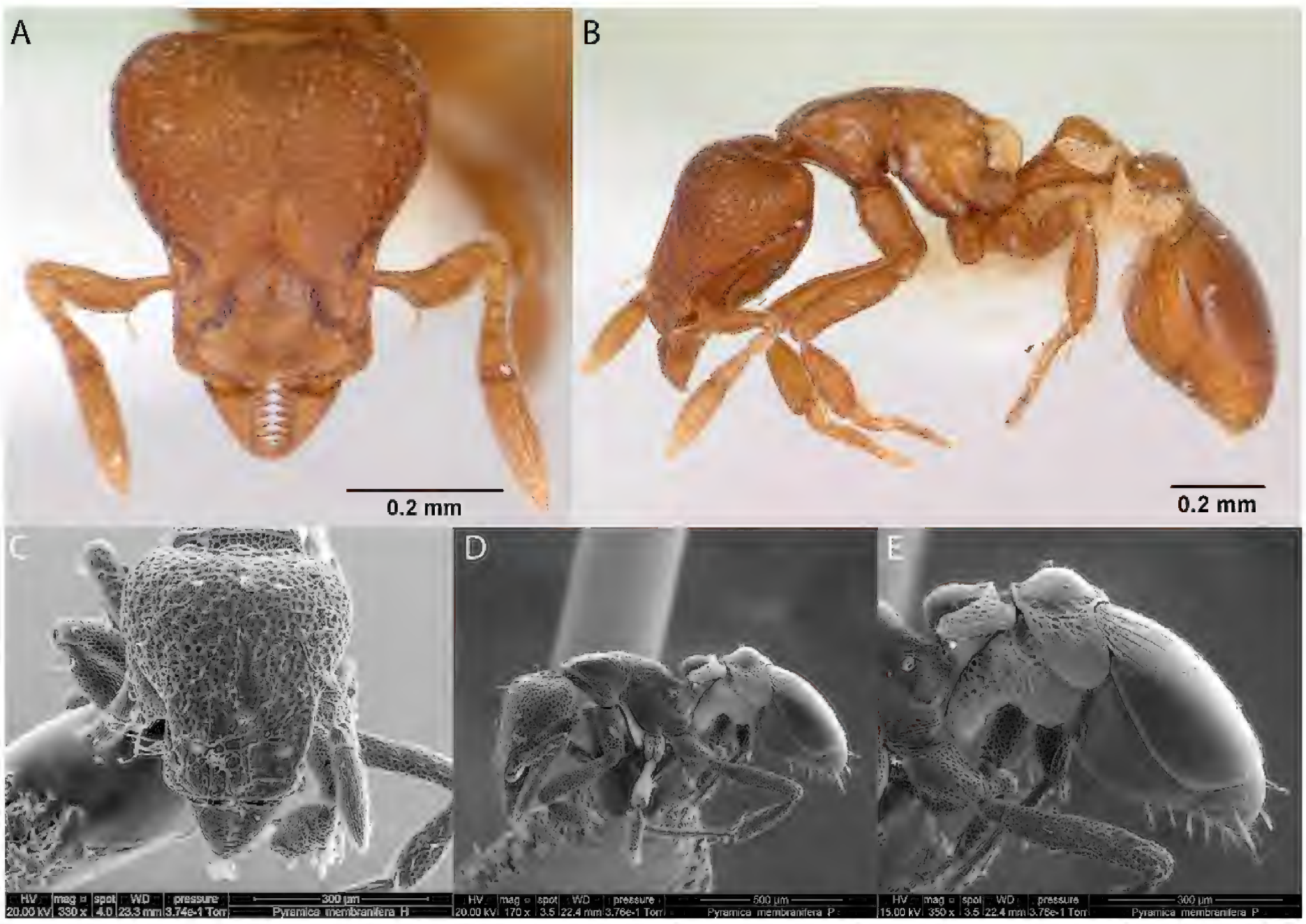

Figure 36. *Strumigenys membranifera* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** head in profile **E** petiole and postpetiole with developed spongiform tissue.

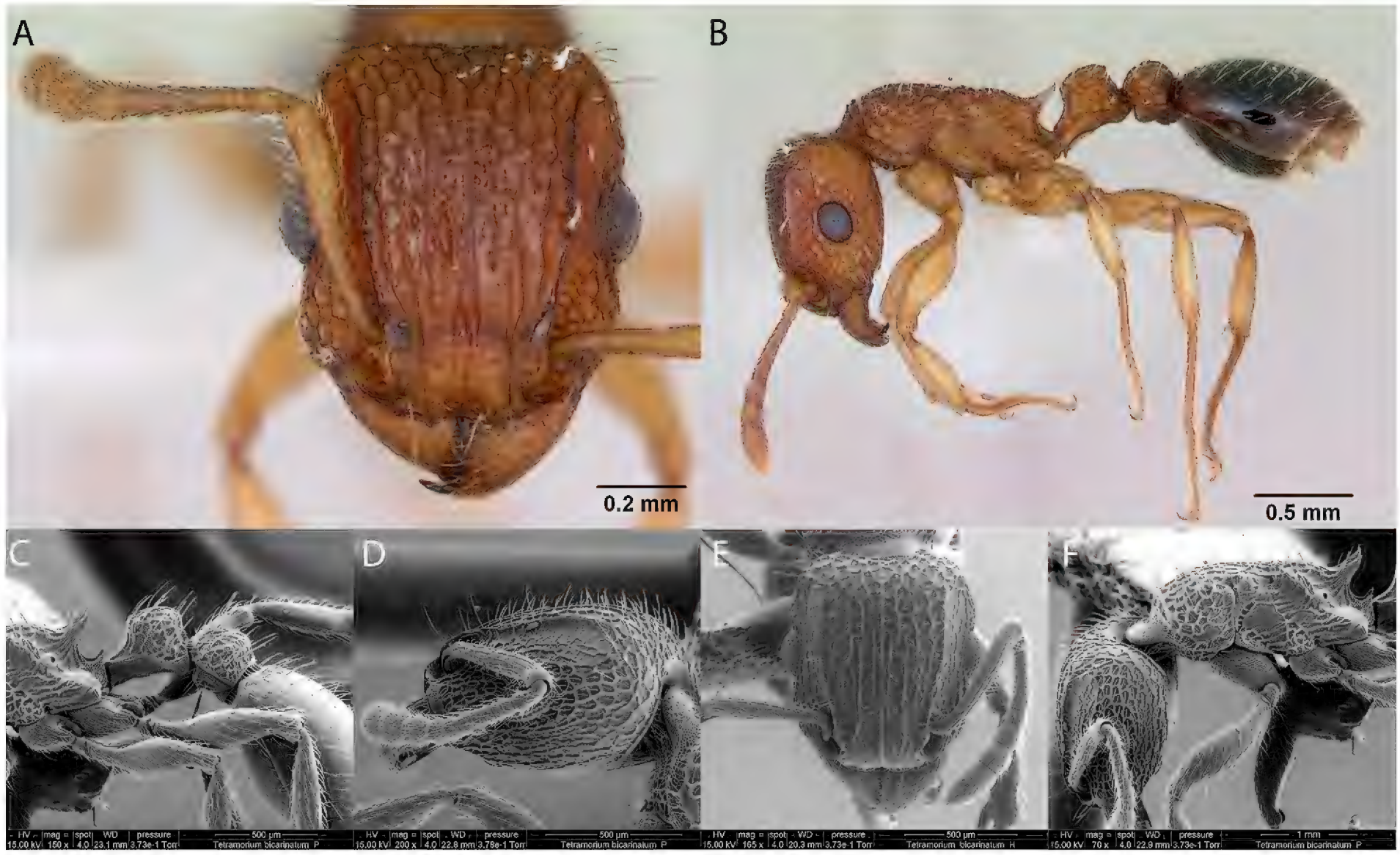

Figure 37. *Tetramorium bicarinatum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** petiole and postpetiole in profile **D** head in profile **E** head in full-face view **F** mesosoma in profile.

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Bainbridge #1, Bainbridge #2, Bainbridge #3, Bainbridge #4, Bainbridge #5, Bainbridge #6, Bainbridge #8, Baltra, Bar, Bayas, Caldwell, Daphne Mayor, Española, Fernandina, Floreana, Gardner (next to Floreana), Gardner (next to Española), Genovesa, Guy Fawkes, Isabela (CA, SN, VA, VD, VE, VW), Mariela Grande, Mariela Mediana, Marchena, Pinzón, Plaza Norte, Plaza Sur, Rábida, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé, Sombrero Chino (Herrera et al. 2020).

New records. Beagle #2, Beagle #3, Santiago Island.

Tetramorium caldarium (Roger, 1857)

Fig. 38

Remarks. Originally cited as *Tetrogmus caldarium* in (Roger, 1857). Cited in Brandão and Paiva (1994), Meier (1994), Pezzatti et al. (1998), von Aesch and Cherix (2005), von Aesch (2006), Causton et al. (2006), Dekoninck et al. (2014) [RBINS], Wauters et al. (2016) [RBINS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Kempf (1972), Brandão (1991), Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Floreana, Santa Cruz (Herrera et al. 2020).

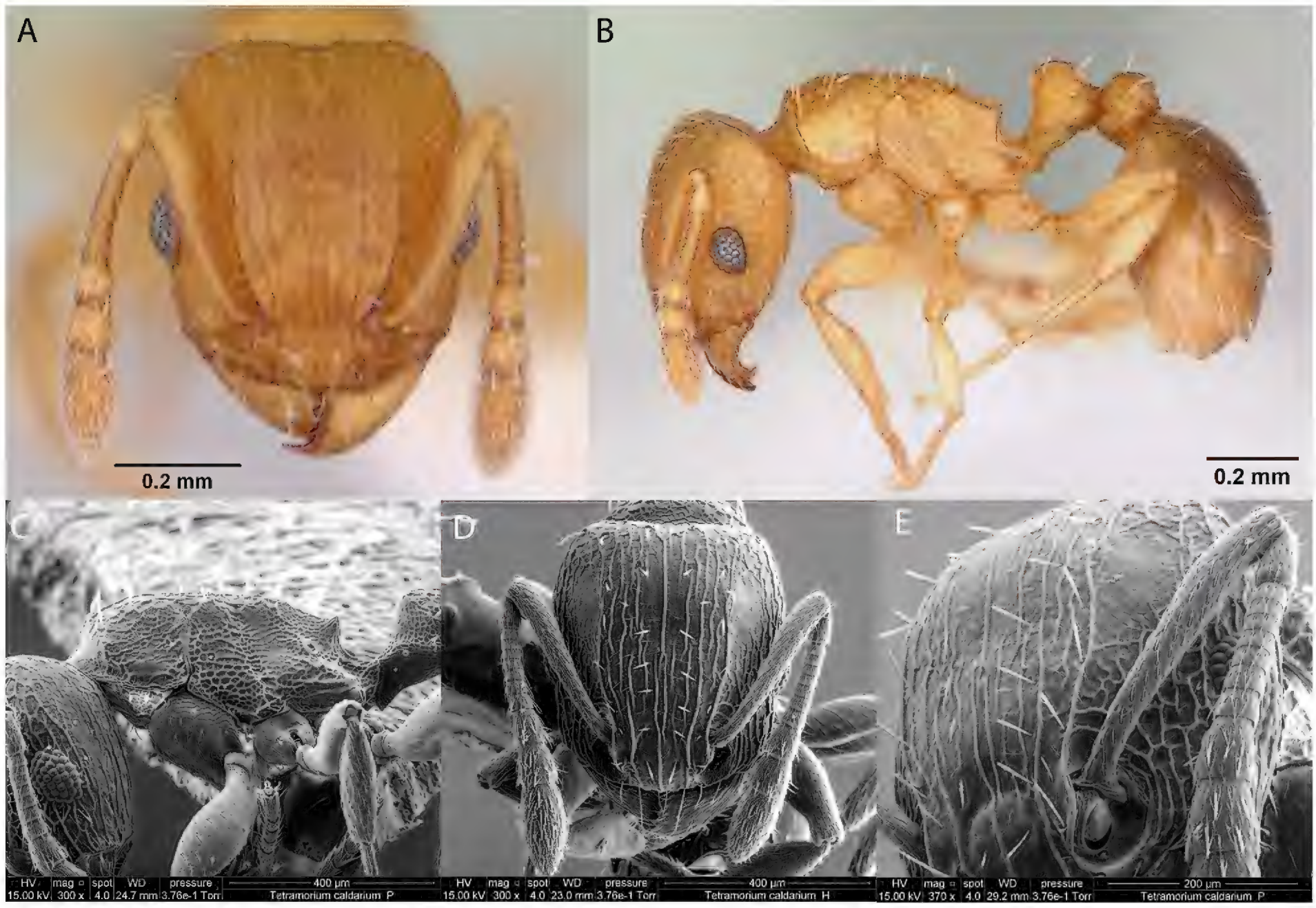

Figure 38. *Tetramorium caldarium* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma profile **D** head in full-face view **E** close-up on the antennal scrobe.

***Tetramorium lanuginosum* Mayr, 1870**

Fig. 39

Remarks. First published record (Pezzatti et al. (1998) [ICCDRS]. Cited also in Causton et al. (2006), Herrera and Causton (2010) [ICCDRS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. In Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Bainbridge #3, Bainbridge #8, Baltra, Floreana, Gardner (next to Española), Isabela (VD), Pinzón, Plaza Norte, Plaza Sur, Rábida, San Cristóbal, Santa Cruz, Santa Fé, Seymour Norte, Wolf (Herrera et al. 2020).

New records. Bainbridge #1, Bartolomé, Beagle #2, Beagle #3, Champion, Mao, Marchena, Santiago, Sombrero Chino.

***Tetramorium simillimum* (Smith, 1851)**

Fig. 40

Remarks. Originally cited as *Myrmica simillimum* in (Smith, 1851). First published record in Wheeler (1919). Cited also in Wheeler (1933), Kempf (1972),

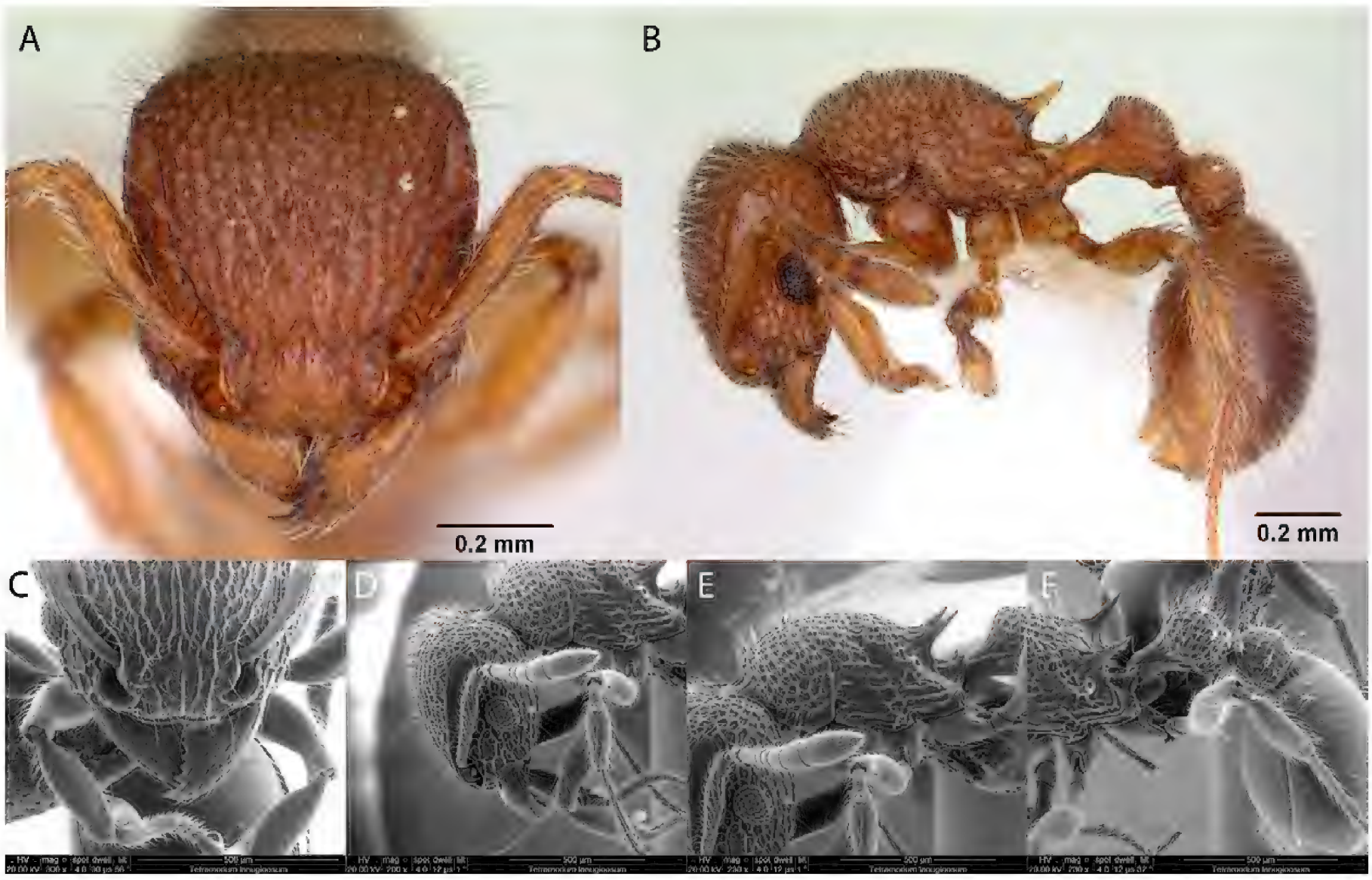

Figure 39. *Tetramorium lanuginosum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on mandibles and clypeus **D** head in profile **E** mesosoma in profile **F** petiole and postpetiole in profile.

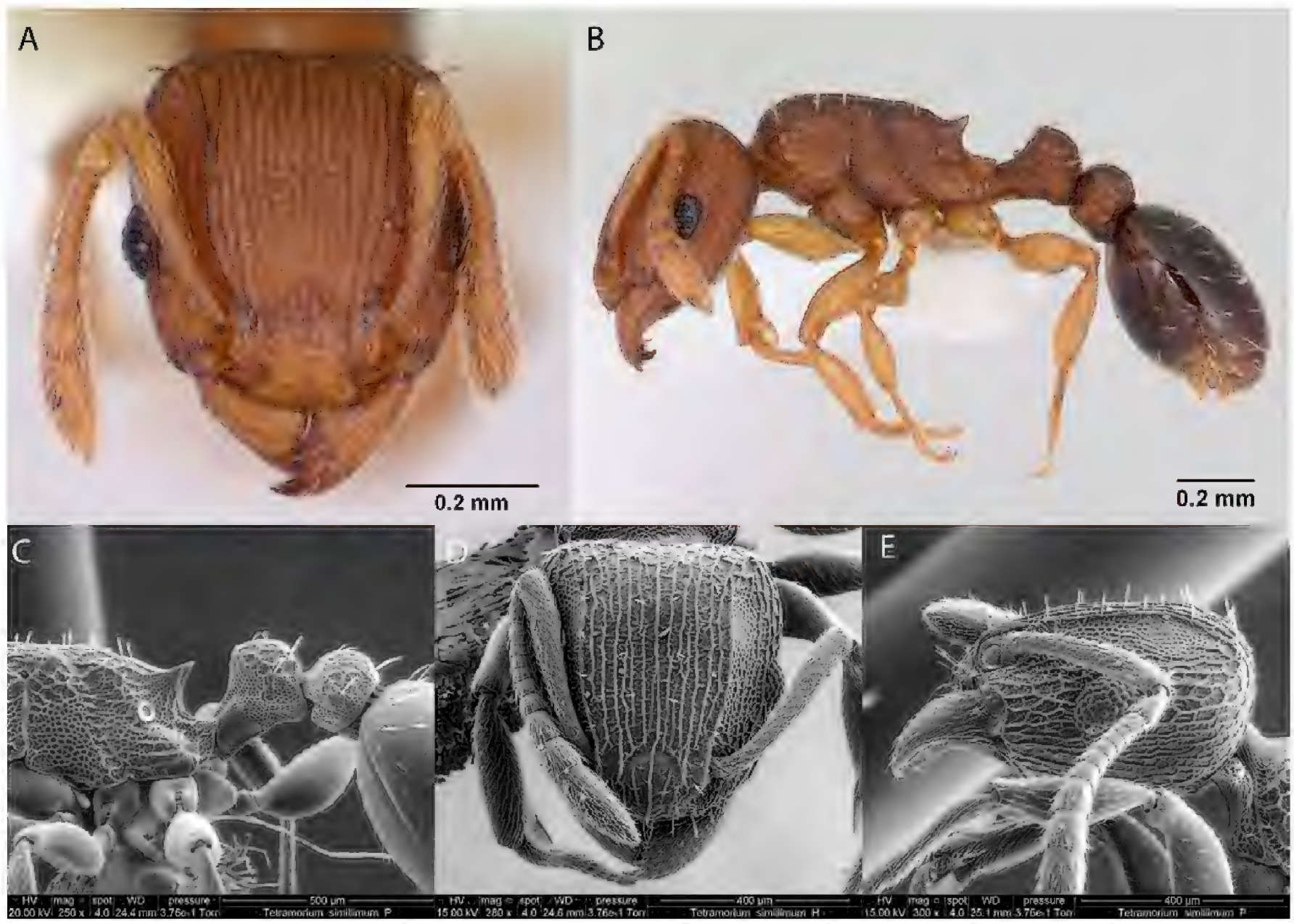
A
B
0.2 mm
0.2 mm
C
D
E
HV mag spot WD pressure 500 µm
20.00 kV 250 x 4.0 24.4 mm 3.76e-1 Torr Tetramorium simillimum P
HV mag spot WD pressure 400 µm
15.00 kV 280 x 4.0 24.6 mm 3.76e-1 Torr Tetramorium simillimum H
HV mag spot WD pressure 400 µm
15.00 kV 300 x 4.0 25.1 mm 3.76e-1 Torr Tetramorium simillimum P

Figure 40. *Tetramorium simillimum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** petiole and postpetiole in profile **D** head in full-face view **E** head in profile.

Linsley and Usinger (1966), Clark et al. (1982), Lubin (1984), Lubin (1985), Brandão and Paiva (1994), Abedrabbo (1994) [ICCDRS], Peck et al. (1998), (Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], von Aesch and Cherix (2005), von Aesch (2006) [ICCDRS], Causton et al. (2006), Herrera and Causton (2010) [ICCDRS], Herrera et al. (2014). Wauters et al. (2016) [RBINS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Bainbridge #6, Baltra, Bar, Cousin, Daphne Mayor, Floreana, Gardner (next to Floreana), Isabela (SN, VA), Marchena, Mariela Grande, Santiago, San Cristóbal, Santa Cruz, Tortuga (Herrera et al. 2020).

New record. Mariela Mediana.

***Tetramorium lucayanum* Wheeler, 1905**

Fig. 41

Remarks. First published record in Herrera et al. (2014), Cited also in Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Neotropical, Palearctic.

Galápagos distribution. Introduced: Isabela (CA) (Herrera et al. 2014).

New record. Isabela (SN).

Genus *Trichomyrmex* Mayr, 1855

***Trichomyrmex destructor* (Jerdon, 1851)**

Fig. 42

Remarks. Originally cited as *Atta destructor* in (Jerdon, 1851). Cited as *Monomorium destructor*, in Pezzatti et al. (1998), von Aesch and Cherix (2005), von Aesch (2006), Causton et al. (2006), Herrera and Causton (2010) [ICCDRS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Baltra, Floreana, Isabela (SN), Santiago (Herrera et al. 2020).

Genus *Wasmannia* Forel, 1893

***Wasmannia auropunctata* (Roger, 1863)**

Fig. 43

Remarks. Originally cited as *Tetramorium auropunctata* in (Roger, 1863). First published record in Silberglied (1972). Cited in Lubin (1983), Lubin (1984) [ICCDRS], Lubin (1985), McMullen (1987), Williams (1987), Ulloa-Chacón et al. (1991), Coppois and Wells (1987), McMullen (1990), Brandão (1991), Williams and Whelan

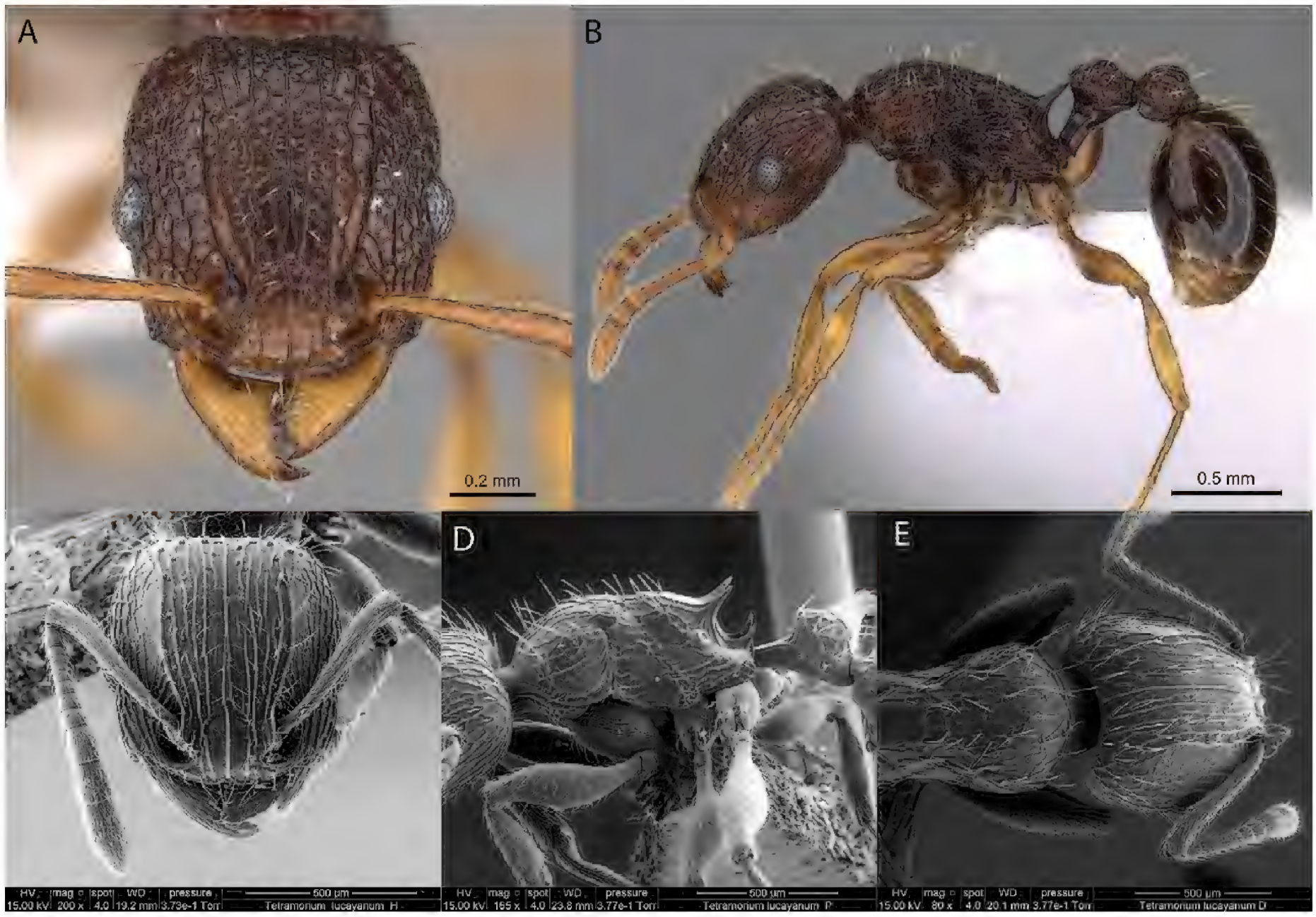

Figure 41. *Tetramorium lucayanum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in profile **E** head in dorsal view.

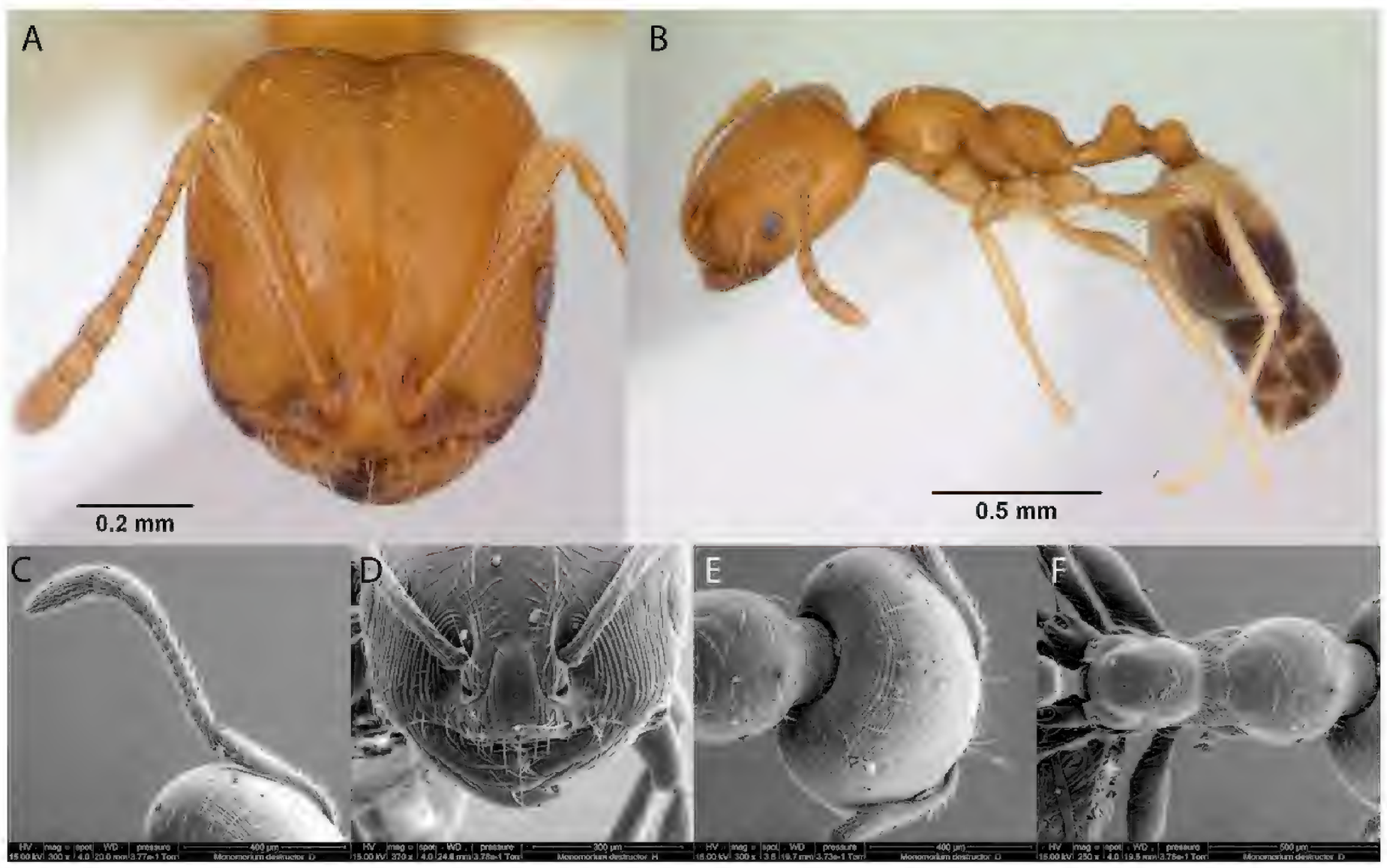

Figure 42. *Trichomyrmex destructor* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on antennae **D** close-up on mandibles **E** head in dorsal view **F** mesosoma in dorsal view.

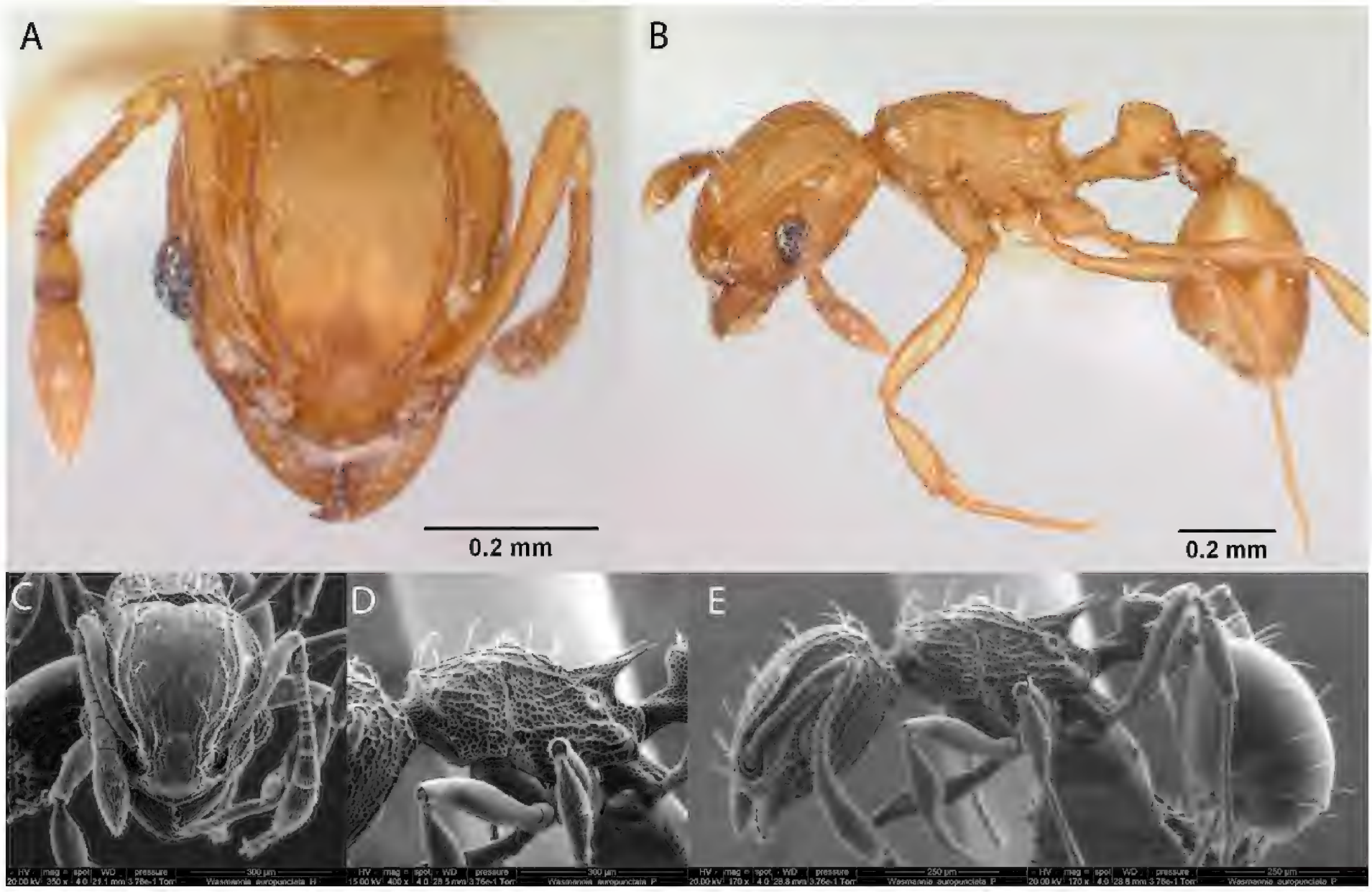

Figure 43. *Wasmannia auropunctata* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in profile **E** head in profile **F** metasoma in profile.

(1992), McMullen (1993), Brandão and Paiva (1994), Meier (1994), Abedrabbo (1994) [ICCDRS], Ulloa-Chacón and Cherix (1994), de la Vega (1994), Lundh (1998), Peck et al. (1998), Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], Boada (2005) [ICCDRS], Causton et al. (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Causton et al. (2006), McMullen (2007), Herrera and Causton (2010) [ICCDRS], Herrera and Longino (2008), (McMullen (2011), Herrera et al. (2013), Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2014) [RBINS], Wauters et al. (2016) [RBINS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Afrotropical, Australasia, Indomalaya, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Albany, Bainbridge #1, Baltra, Bowditch South, Champion, Cousin, Eden, Española, Floreana, Gran Felipe, Isabela (SN, VA, VD, VE, VW), Mao, Marchena, Pinzón, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé, Tortuga (Herrera et al. 2020).

Key to the genera and species of the subfamily Ponerinae

1 Mandible elongate and linear (Figs 49C, 50C); petiolar node armed with apical spine (Figs 49D, 50D). (*Odontomachus*) **2**

– Mandibles not elongate (Figs 44D, 47C, 48C); petiole not armed with apical spine (Figs 44C, B, 47A, C) **3**

2 Entirely dark brown (Fig. 49A, B); long hairs located below the mandibles, running from the base towards the apex (Fig. 49C); anterior face of the petiole somewhat convex (Fig. 49D)..... ***Odontomachus bauri***

– Somewhat tricolored: head, antennae and legs orangish, mesosoma reddish brown and gaster dark brown (Fig. 50A, B); ventral face of mandibles with short hairs running from base towards apex (Fig. 50C); anterior face of petiole almost straight or less convex than above (Fig. 50D)..... ***Odontomachus ruginodis***

3 Mandibles falcate with apical tooth; anterior margin of clypeus triangular with carina conspicuously or slightly visible in median portion (Figs 47C, 48C); anterior legs with finely pectinate tarsal claws (Fig. 48D) (*Leptogenys*)..... **4**

– Triangular with dentate mandibles; anterior margin of clypeus without median carina (Fig. 44D; 46D); legs with simple tarsal claws (Fig. 44F) (*Hypoponera*) **5**

4 Mandibles with basal margin distant from the anterior margin of clypeus when closed (Fig. 47A, C); in lateral view, mesosoma with numerous hairs and petiole higher than wide (Fig. 47D); ~ 5 mm long; body entirely brown (Fig. 47A, B) ..... ***Leptogenys santacruzi***

– Mandibles with basal margin almost flush with the anterior border of clypeus when closed (Fig. 48A, C); mesosoma smooth and shiny with few setae; lacking longitudinal striae in the pronotum and propodeum; petiole elongated in lateral view (Fig. 48B, E); ~ 4 mm long; body black, mandibles, legs, and antennae brown (Fig. 48A, B) ..... ***Leptogenys* cf. *gorgona***

5 Color dark red brown to black (Fig. 45A, B); scape of antenna reaching the occipital margin of the head (Fig. 45A); petiolar node quadrate (Fig. 45B, C) ..... ***Hypoponera opaciceps***

– Color red brown to dark brown (Figs 44A, B, 46A, B); scape of antenna never reaching the occipital margin of the head (Figs 44A, 46E); petiolar node never quadrate..... **6**

6 Lateral surface of petiole relatively coarse with the dorsum somewhat rounded, not totally covered with fine appressed hairs (Fig. 44C)..... ***Hypoponera beebei***

– Lateral surface of petiole somewhat more thick than coarse, with the dorsum somewhat triangular, sometimes covered by many fine appressed hairs (Fig. 46F)..... ***Hypoponera opacior***

Genus *Hypoponera* Santschi, 1938

Hypoponera beebei (Wheeler, 1924)

Fig. 44

Remarks. Originally cited as *Ponera beebei* in Wheeler (1924: 107). *Hypoponera beebei* in Linsley and Usinger (1966), Kempf (1972), Lubin (1985), Peck (1994a), Peck (1994b), Roque-Albelo et al. (2000), Wauters et al. (2016), Lubin (1984), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Kempf (1972), Bolton (1995, 2014), Bolton et al. (2006).

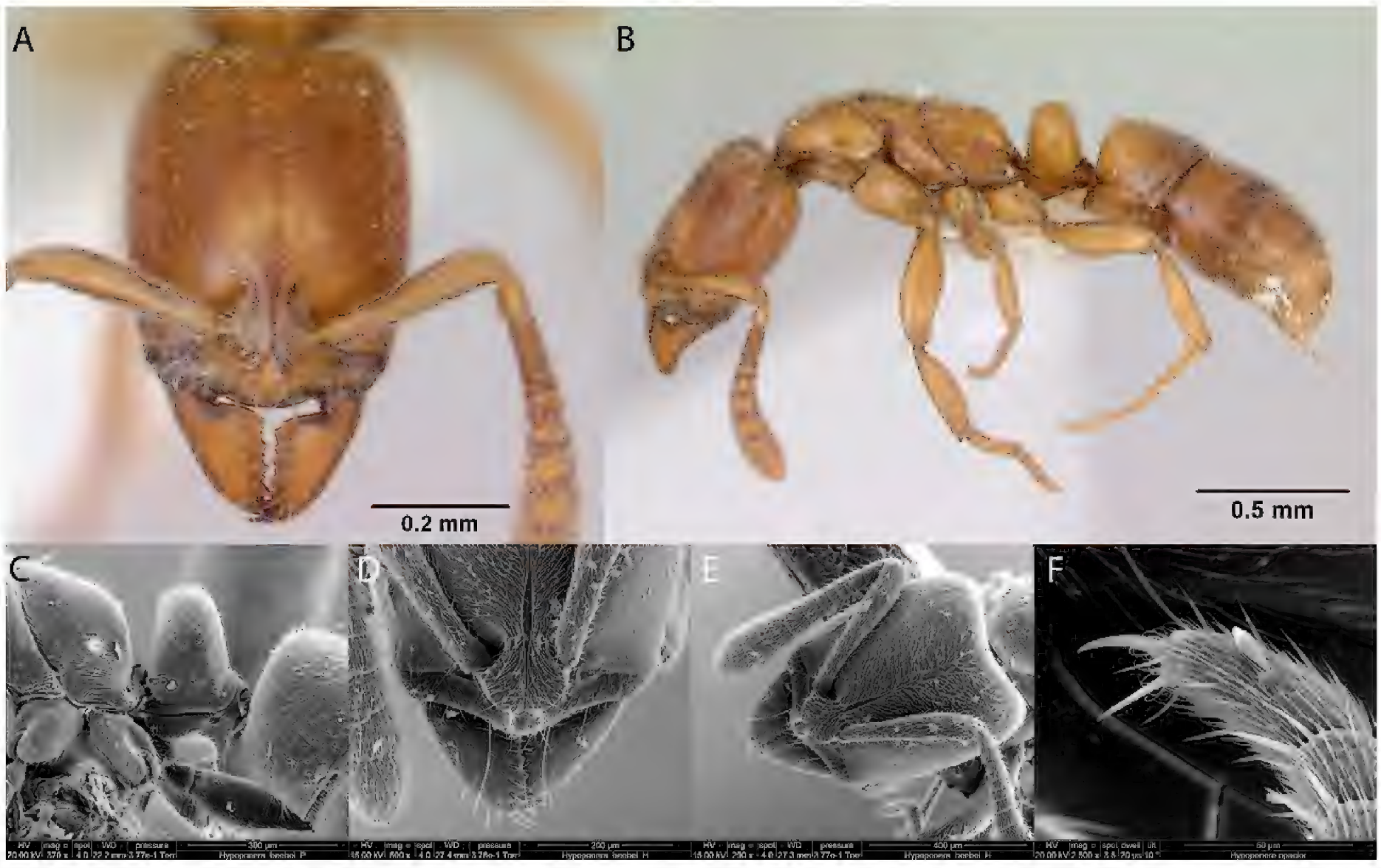

Figure 44. *Hypoponera beebei* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on petiole in profile **D** close-up on mandibles **E** head in full-face view **F** close-up on tarsal claws.

Distribution. Possibly endemic: Fernandina, Floreana, Isabela (CA, SN, VA, VW), Marchena, San Cristóbal, Santa Cruz, Seymour Norte, Genovesa (Herrera et al. 2020).

Hypoponera opaciceps (Mayr, 1887)

Fig. 45

Remarks. Originally cited as *Ponera opaciceps* in (Mayr, 1887). First published record in (Lubin 1983). Cited also in Lubin (1984), Peck (1994b), Dekoninck et al. (2014), Herrera (2015), Wauters et al. (2016), and Herrera et al. (2020).

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Australasia, Indomalaya, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution. Introduced: Baltra, Fernandina, Floreana, Isabela (CA, SN, VA, VD) Marchena, San Cristóbal, Santa Cruz, Santiago (Herrera et al. 2020).

Hypoponera cf. *opacior* (Forel, 1893)

Fig. 46

Remarks. Originally cited as *Ponera opacior* (Forel, 1893). In Herrera et al. (2014), Dekoninck et al. (2014) [RBINS], Herrera (2015, 2019), and Herrera et al. (2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

A
0.2 mm
B
0.5 mm
C
D
E
HV mag spot WD pressure 500 µm
15.00 kV 170 x 4.0 21.9 mm 3.74e-1 Torr Hypoponera opaciceps P
HV mag spot WD pressure 500 µm
15.00 kV 200 x 4.0 21.5 mm 3.74e-1 Torr Hypoponera opaciceps H
HV mag spot WD pressure 300 µm
15.00 kV 400 x 4.0 21.6 mm 3.73e-1 Torr Hypoponera opaciceps P

Figure 45. *Hypoponera opaciceps* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on petiole in profile **D** head in full-face view **E** stinging apparatus.

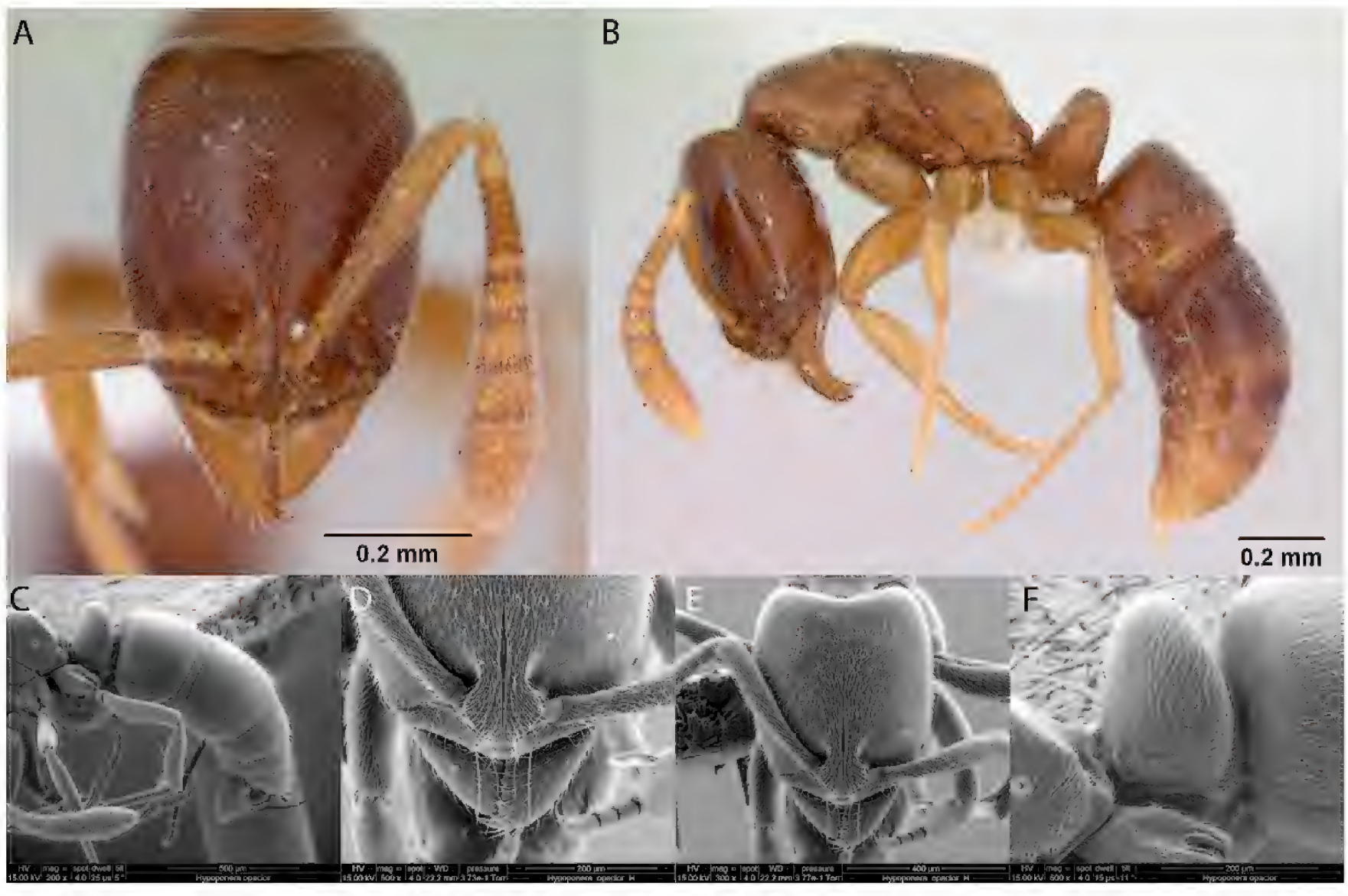

Figure 46. *Hypoponera* cf. *opacior* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** metasoma in profile **D** close-up on mandibles **E** head in full-face view **F** close-up on petiole in profile.

Distribution. Nearctic, Neotropical.

Galápagos distribution. Introduced: Fernandina, Floreana, Isabela (CA, SN, VA, VD, VW), San Cristóbal, Santa Cruz (Herrera et al. 2014).

Genus *Leptogenys* Roger, 1861

Leptogenys santacruzi Lattke, 2011

Fig. 47

Remarks. Cited in Herrera (2015, 2019) and Herrera et al. (2020) [CAS. ICCDRS].

Taxonomic history. Lattke (2011) and Bolton (2014).

Distribution. Endemic: Isabela (VA), Santa Cruz Islands (Herrera et al. 2020).

Leptogenys sp. *gorgona* (hh03)

Fig. 48

Remarks. Cited in Lattke (2011), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Distribution. Native: Santa Cruz.

New record. Isabela Island (SN).

Genus *Odontomachus* Latreille, 1804

Odontomachus bauri Emery, 1892

Fig. 49

Remarks. Cited as *O. bauri* in Emery (1893), as *Odontomachus haematoda bauri* in Wheeler (1919) [CAS], Wheeler (1924), Wheeler (1933) [CAS], Kempf (1972) and *Odontomachus haematoda* in Stitz (1932). *Odontomachus bauri* in Pezzatti et al. (1998), von Aesch and Cherix (2005), Linsley and Usinger (1966), Lubin (1984), Brandão (1991), Brandão and Paiva (1994), de la Vega (1994), von Aesch and Cherix (2005), von Aesch (2006) [ICCDRS], Causton et al. (2006), Dekoninck et al. (2014) [RBINS], Wauters et al. (2014), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Neotropical.

Galápagos distribution. Introduced: Floreana, Isabela (CA, SN), San Cristóbal, Santa Cruz (Herrera et al. 2020).

Odontomachus ruginodis Wheeler, 1908

Fig. 50

Remarks. First published record in Herrera et al. (2014), see also Herrera (2015, 2019) and (Herrera et al. 2020) [ICCDRS].

Taxonomic history. Bolton (1995, 2014), Bolton et al. (2006).

Distribution. Nearctic, Neotropical.

Galápagos distribution. Introduced: Santa Cruz (Herrera et al. 2014).

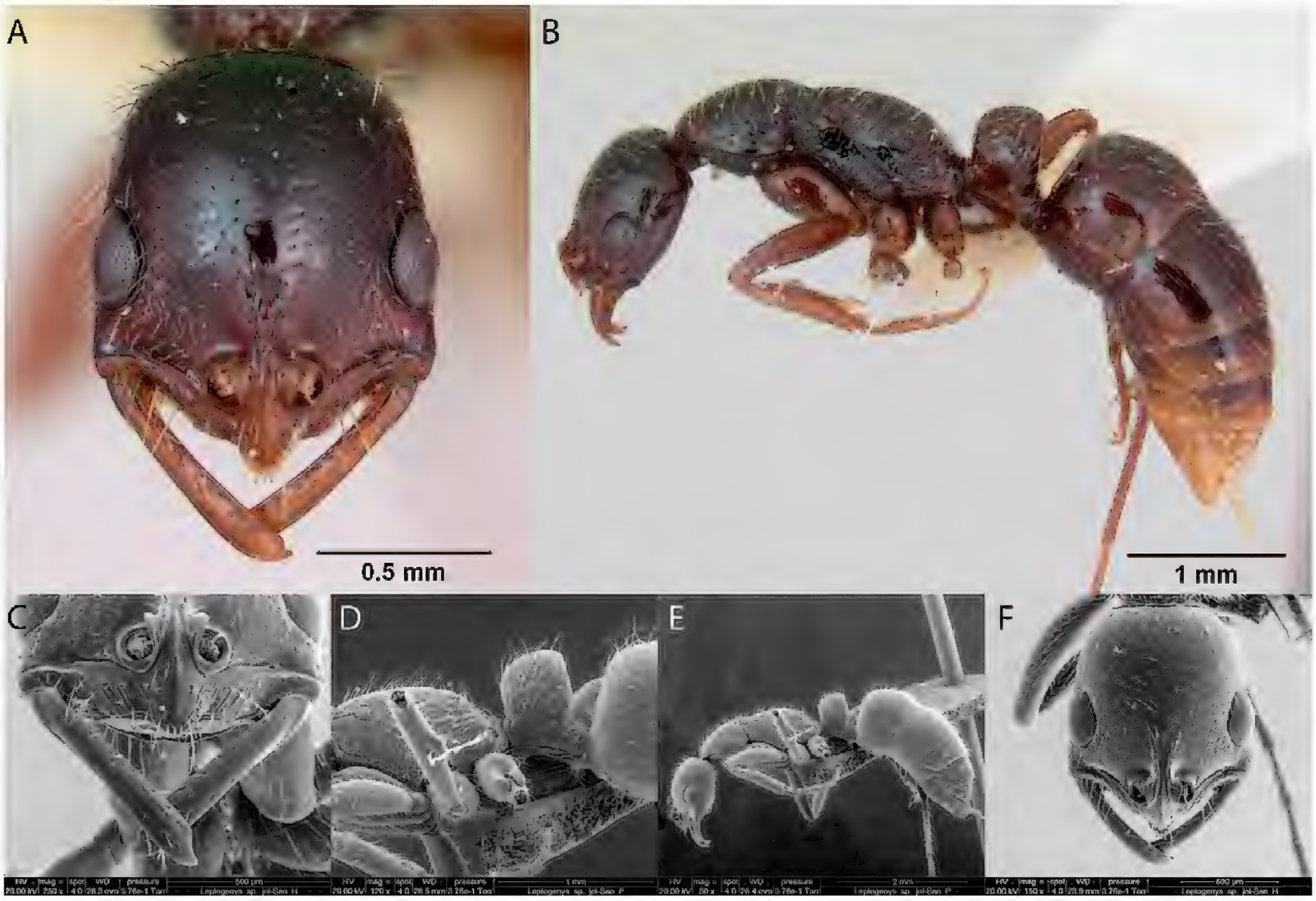

Figure 47. *Leptogenys santacruzi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on mandibles **D** close-up on petiole in profile **E** view in profile **F** head in full-face view.

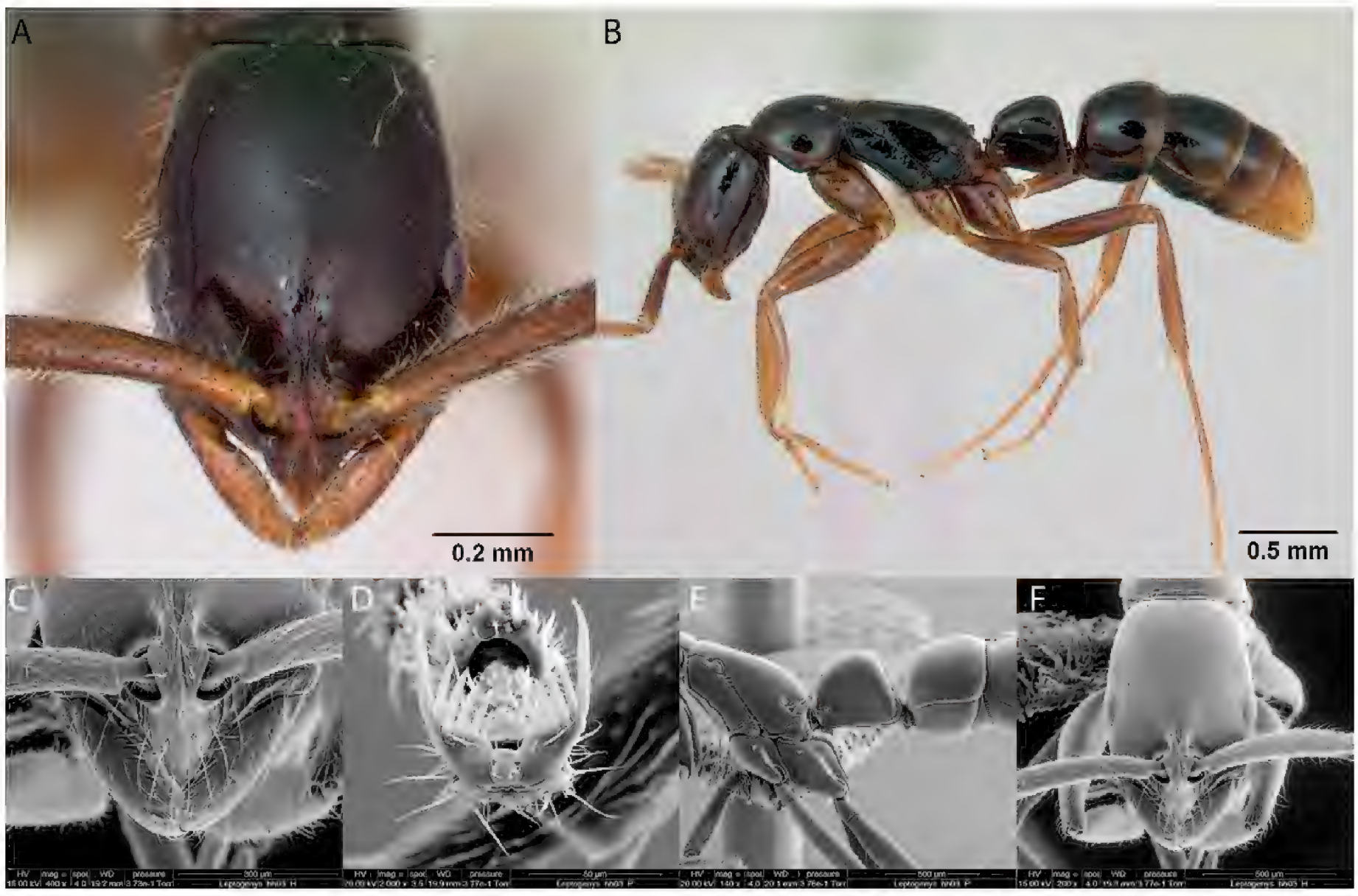

Figure 48. *Leptogenys* cf. *gorgona* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on clypeus **D** close-up on tarsal claws **E** close-up on petiole in profile **F** head in full-face view.

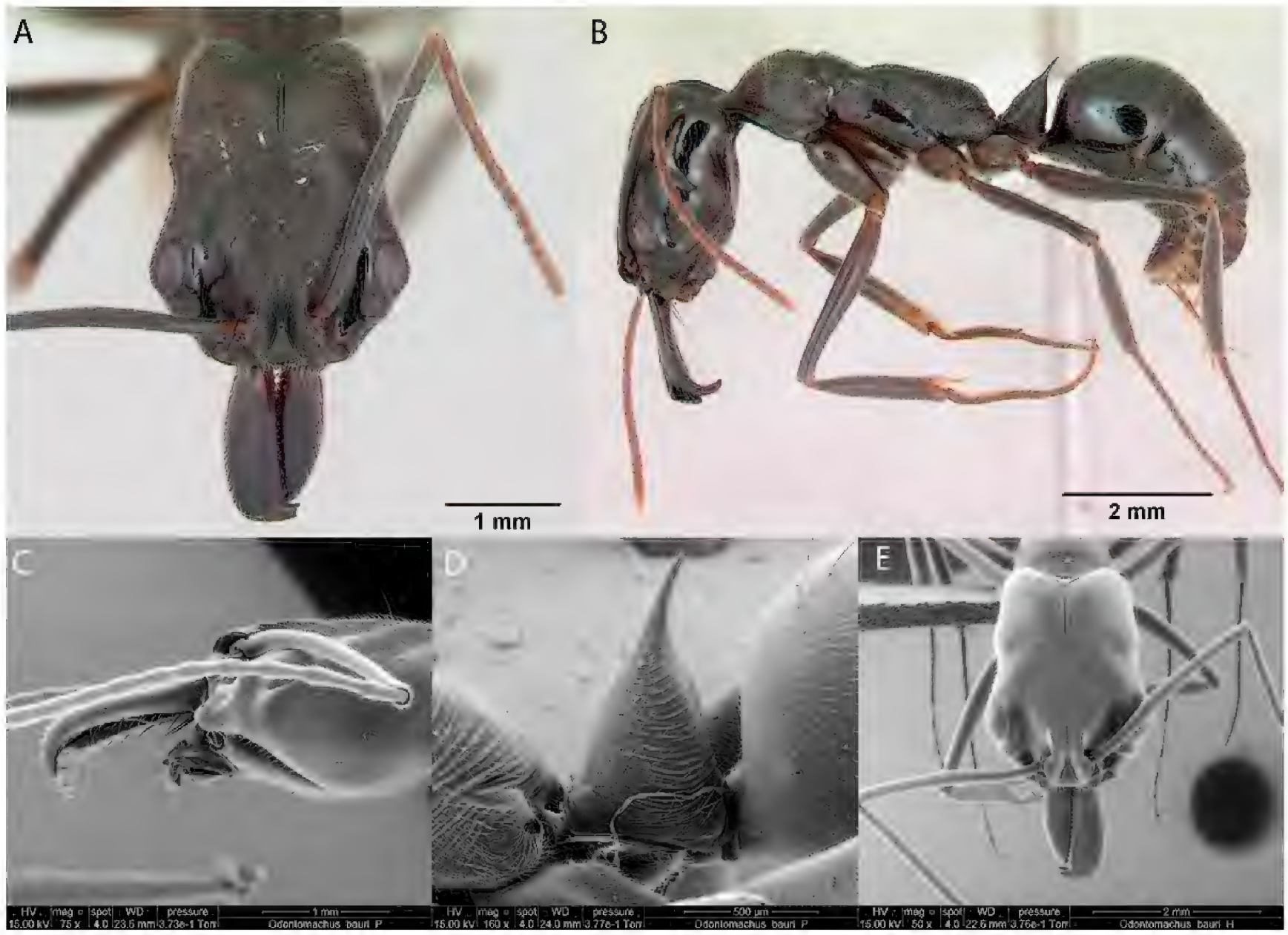

Figure 49. *Odontomachus bauri* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in profile **D** close-up on petiole in profile **E** head in full-face view.

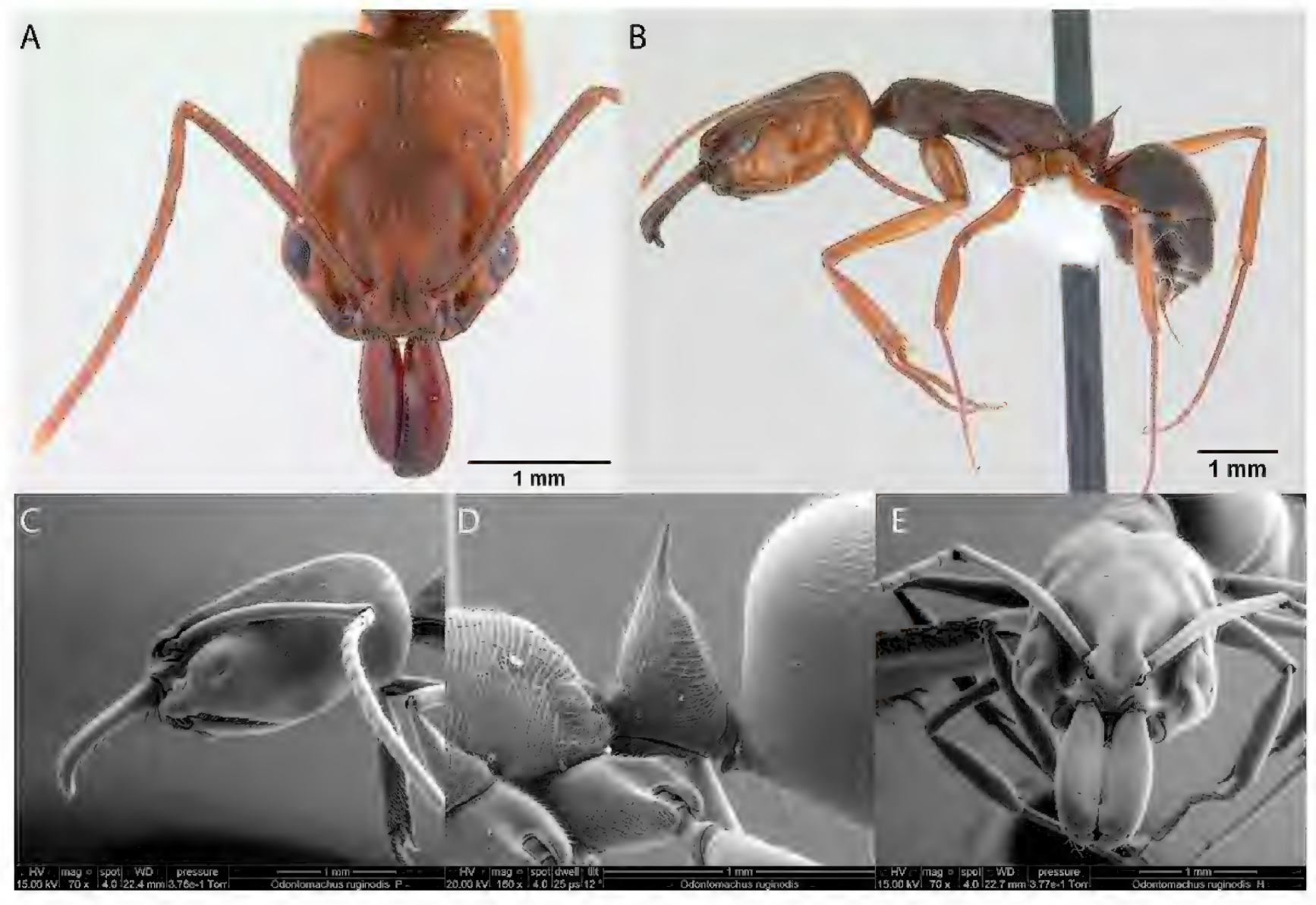

Figure 50. *Odontomachus ruginodis* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in profile **D** close-up on petiole in profile **E** head in full-face view.

Acknowledgements

We thank the Galápagos National Park Directorate (GNPD) for providing research and export permits (PC-32-14; PC-37-14; PC-27-15; PC-67-18; PC-41-19), along with the Charles Darwin Foundation (CDF) for their support and providing facilities. We are grateful to all the contributors cited in Herrera et al. (2020) who provided samples or made collections possible. We also thank Brian Fisher and April Nobile who assisted in the visit of the first author to the California Academy of Sciences (CAS). April Nobile (CAS) and Julian Cilies (RBINS) photographed specimens in Auto-Montage and scanning electron microscope. Julien Caudron (RBINS) made the drawings used as guides for the identification of parts of the ants. We also thank Yessenia Campaña and Fernanda Logroño (ESPOCH) for the project's logistics. Thanks to Thibaut Delsinne, Fernando Fernandez, and anonymous reviewers for their revision of the manuscript. This publication is contribution number 2564 of the Charles Darwin Foundation for the Galápagos Islands and the number 004 under cooperative agreement ESPOCH-FCD/2017-2022, and ESPOCH- GNPD /2018-2021.

Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

Funding

This research was supported by Swiss Friends of Galápagos (Freunde der Galápagos Inseln), Lindblad Expeditions-National Geographic Fund, Galápagos Conservancy, the Lakeside Fund of the California Academy of Sciences, the Leopold III funding, Department Entomology of RBINS and the Belgian Focal Point of the Global Taxonomy Initiative.

Author contributions

Conceptualization: HWH, FH, WD. Data curation: MCCT, HWH, GF. Formal analysis: MCCT, GF. Investigation: HWH. Methodology: MCCT, GF. Supervision: HWH. Visualization: GF, MCCT. Writing – original draft: HWH. Writing – review and editing: FH, GF, CEC, WD, MCCT.

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Data availability

All of the data that support the findings of this study are available in the main text.

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